CLINICAL MEDICINE

GEORGE B. LAKE, Jr.
Publisher

RALPH L. GORRELL, M.D.
Acting Editor

EDITORIAL STAFF
Frank Thomas Woodbury, B.A., M.D.
Lee Douglas van Antwerp, A.B., M.D., F.A.C.P.
W. A. N. Dorland, A.M., M.D., F.A.C.S.
Harold Swanberg, B.Sc., M.D., F.A.C.P.
Gentz Perry, M.S., M.D., F.A.C.R.
H. J. Achard, M.D.

VOLUME 51 SEPTEMBER, 1944 NUMBER 9

Latent Phlebitis and Rheumatism

By OTTO MEYER, M.D., *New York City*

RHEUMATISM is a general term derived from the Greek word "rheuma" which means "flow." The word "rheuma" came into use centuries ago and was chosen by the physicians of that time to designate a noxious or poisonous matter flowing through the human body and being the cause of rheumatism. The fundamental correctness of this old explanation of rheumatism is fully confirmed by modern research. Recent discoveries have shown that rheumatism is most frequently caused by the action of bacterial poisons carried through the body by the bloodstream.

Until recently, little headway was made in curbing this disease. This was mainly due to the ignorance of the true cause of rheumatism. Therefore, treatment had no definite point of attack, and its success was entirely left to chance.

The fact that focal infections are the cause of most rheumatic diseases has been proved. Infectious foci must be considered as toxin production centers. Sir Robert Muir, the famous Scotch pathologist, writes: "It is now accepted that all the important results of bacteria in the tissues are due to poisonous bodies or toxins formed by them." An essential factor of focal infection is the long distance action of toxins.

The author[1] originated the idea that all bacterial infections in the oral cavity have an affinity for the veins (phlebotropic tendency). Before this important fact was known oral focal infection was hardly ever associated with phlebitis. All oral infections spread through the small connecting veins into the jugular veins and form here a secondary focus. (Fig. 1)

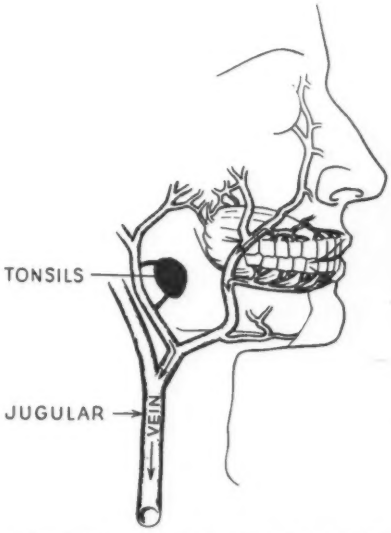


Fig. 1. This schematic drawing shows how infections spread from infected teeth and tonsils to the jugular veins by way of small connecting veins.

Dietrich, Siegmund, and Colby Hall[2,3,4] described jugular phlebitis in postmortem cases of septicemia following acute infections of the tonsils, teeth and of the pharynx. Their pathological findings prove the correctness of the author's conception of phlebotropy.

Most vein infections are formed in the

jugular veins (infection by continuity) and in the deep veins of the leg (predisposed by congestion).

The author's attention was first called to the connection between phlebitis and rheumatism by the fact that a great number of patients whom he treated for chronic phlebitis were also suffering from rheumatism. Nearly all phlebitis patients have "barometric" feelings when the weather changes. In all these patients who suffered from phlebitis and rheumatism at the same time, the author observed that the cure of the phlebitis was always followed by a decided improvement of the rheumatic condition, which in most instances disappeared completely, although there was no local treatment of rheumatic symptoms.

In studying this problem, the author never lost sight of the one firmly established fact, namely, that the cause of rheumatism is the toxin produced by bacteria at some point of the body. He reasoned that in the search for the focus which causes rheumatism, it was necessary to look for an as yet unrecognized focal infection[5], which despite its concealment, must be a very common and widespread disease. The author found this evasive focus in the veins.

Concealed chronic phlebitis is the most frequent cause of every type of rheumatism.

French authors have called attention to the fact that there is a close relationship between phlebitis and rheumatism. Audier, the author of the book, "Le diagnostic des phlebites des membres" writes: "Often we have seen develop progressive chronic rheumatism following a simple phlebitis."

The great French pathologist, Jean Baptiste Cruveilhier, who claimed that phlebitis dominates all pathology wrote in 1842 in his "Atlas Pathologique": "The pain in acute phlebitis presents all the characteristics of the pain experienced in more or less acute cases of rheumatism with which it has been often confounded."

The connection between phlebitis and rheumatism is shown by the fact that the author has found a concealed chronic phlebitis in practically all patients suffering from arthritis, neuralgia, neuritis or muscular rheumatism. Of greatest interest is the observation that patients with an "open" leg, which in most cases is nothing but a *phlebitic* ulcer (usually wrongly called "varicose" ulcer), rarely suffer from rheumatism. Here the ulcer apparently protects the body against rheumatism, because it serves as an outlet for the bacterial poison which is produced in the infected deep veins of the leg.

The conclusive proof that phlebitis plays the most important part of all the focal infections causing rheumatism, is the irrefutable fact — demonstrated in hundreds of successfully treated patients — that rheumatism can nearly always be cured by removing a simultaneously existing infection in the veins. Moreover, it has been shown that patients treated in this manner are not exposed to further attacks of rheumatism.

The discovery of phlebitis as the most important source of bacterial toxins has provided the necessary basis for a successful causal treatment of rheumatism. Therefore we come to the conclusion: Phlebitis is the chief source of toxins; toxins cause rheumatism. Therefore, the most logical treatment of rheumatism is the removal of the infections in the wall of the veins.

Rheumatism in most cases must be regarded as a symptom of phlebitis. If we cure the phlebitis before rheumatism has had a chance to develop, then the latter will never come into existence. Every patient suffering from phlebitis is a potential victim of rheumatism. Therefore every case of phlebitis should be treated as soon as possible. This is the safest way to prevent rheumatism.

Phlebitis, however, occurs most frequently in a concealed form which is not easily recognized unless one is familiar with the causes and symptoms. Rheumatism can never be understood fully without a thorough knowledge of phlebitis.

Causes of Phlebitis

Phlebitis is usually the sequel of infections: (focal infections, pharyngitis, grippe, measles, scarlet fever, diphtheria, erysipelas, pneumonia, pleurisy, typhoid fever, gonorrhea, infections following operations etc.)

Phlebitis develops often after injuries: (sprained ankle, other sprains, fractures, gunshot wounds, bruises, chilblains and so on.)

Long uninterrupted standing causes often congestion in the legs and subsequently phlebitis.

Forms of Phlebitis

Besides the well known types of acute or chronic phlebitis with all their typical manifestations there still exists another variation, namely *latent* phlebitis. Latent means concealed and this describes ex-

actly the characteristic feature of this form of phlebitis. It is present, but it does not show. We find latent-acute phlebitis in the jugular veins or in the veins of the leg in acute rheumatic fever. Much more frequent and much more important in connection with rheumatism is latent-chronic phlebitis, the most frequent type of phlebitis.

Symptoms of Latent-Chronic Phlebitis

It is one of the most common ailments; and it is really surprising that this condition has until now escaped the attention of medical research. It is nearly always located in the jugular veins and in the deep veins of the leg. There is no noticeable congestion in the legs themselves; all the symptoms are due solely to the action of the toxins on the rest of the body. *The legs appear to be normal.* The victim of this disease is completely unaware of the fact that the veins of his legs are inflamed because, as already stated, there are no direct symptoms which point to the seat of the disease. "I never had any trouble with my legs," is the characteristic and sometimes indignant answer of these patients to the suggestion that the legs should be examined. Unluckily, the patient is right; he never had any trouble with his legs, otherwise he might have saved himself much pain and discomfort by an early treatment of this seat of chronic infection.

Most of the patients suffering from latent-chronic phlebitis seek medical advice for a rheumatic condition. *For this concealed form of phlebitis is the most frequent cause of every type of rheumatism.* On the basis of this important fact we can say that chronic rheumatism, be it of the joints, the nerves or the muscles, is nearly always a symptom of a latent-chronic phlebitis.

Patients suffering from latent-chronic phlebitis always feel tired, even in the morning just after arising from bed. They often have a sallow, pale complexion, which is due to an anemia caused by the destructive action of the toxins on the red blood corpuscles. The patients are acutely aware of their pronounced lack of energy, without being able to shake off the tired, worn-out feeling which changes every little effort into a formidable task. They are quickly exhausted. *Standing causes more discomfort than walking.* Sometimes these patients suffer from a splitting headache and attacks of dizziness. Other symptoms frequently due to latent-chronic phlebitis are: blurring of the eyes, fatigue, neuralgia, itching, certain types of eczema and shingles. In some cases a complete nervous exhaustion develops. Many cases of neurasthenia can be attributed to the poison in the blood-stream caused by latent-chronic phlebitis.

The first steps in the morning are often painful. But after a little walking the pain disappears. The same happens when patients have been sitting for some time; it is hard for them to get up. Patients complain often of cold feet. Sometimes they experience numbness in the toes or fingers. Before and during menstruation women generally suffer added discomfort.

Latent-chronic phlebitis and chronic phlebitis affect the whole body, because toxins from these infected veins are shed into the blood and "poison" it. We have, therefore, in these cases always a toxinemia or poisoning of the blood. The author has stressed the fact that phlebitis and thrombophlebitis are the basis of toxinemia.

These patients, as a rule, have tried every conventional method of treatment in their vain search for relief. Their tonsils have been removed, their teeth extracted, and they have been subjected to rest cures and diets. But all these measures have been, of course, entirely useless, for none of them has struck at the root of the evil which is the latent-chronic phlebitis in the legs. "They never had any trouble with their legs."

All the symptoms of latent-chronic phlebitis can also be present in the ordinary chronic form of phlebitis and in jugular phlebitis.

Latent-chronic phlebitis may develop from either of the three other forms of phlebitis, especially when they have been treated by the ordinary method of putting the patient to bed until the more violent symptoms subside. This method has a tendency to convert acute and chronic phlebitis into the latent-chronic form. The course of the concealed form of chronic phlebitis is exceedingly slow, and it may take years to develop all of the above-mentioned symptoms. But nearly every patient afflicted with latent-chronic phlebitis will sooner or later become a victim of rheumatism or of a complete nervous exhaustion unless this hidden source of infection is removed from his body.

"Growing Pains"

There exists still another sign, which might almost be called a symptom of latent phlebitis. I am referring to the so-called "growing-pains" in the legs during childhood. These pains are not very severe and occur at irregular intervals.

The early treatment of this disease will not only restore the former healthy vitality of a child, but protect it against acute rheumatic fever and heart disease, as well. Only recently a medical survey showed that many children with "growing-pains" were suffering from heart disease (carditis).
more

Diagnosis of Latent Phlebitis

Latent-acute and latent-chronic phlebitis cause no symptoms which direct the attention to their existence, and until recently these conditions could not be diagnosed with certainty. The acute-latent form was entirely unknown before the author could show that it was the cause of acute rheumatic fever and subsequently of chronic arthritis.

It was necessary to find a method of examination which undeniably indicated the existence of latent phlebitis in the deep veins of the leg.

The solution was found by the author in one of the four characteristic symptoms of every inflamation, namely in "pain." Any pressure exerted upon inflamed tissue causes pain. Therefore, the inflamed deep veins, if subjected to pressure, must be sensitive. On the basis of this consideration, Meyer has discovered several specific points in the leg where it is possible to exert pressure on the veins. If this pressure causes pain, the deep veins are inflamed. Pressure on healthy veins causes no pain. With the help of "Meyer's Pressure Points," (Fig. 2) the experienced physician can discover a latent phlebitis in every case.

The *Journal of the American Medical Association* published on page 1566, April 27, 1935, an abstract of a paper by Dr. C. L. Schmidt on the diagnosis of latent phlebitis in the lower extremities in which it reads: "the author found that the determination of the pressure points described by Meyer is a valuable aid in the diagnosis."

During the examination the leg muscles have to be relaxed. The knee has to be in a flexed position when the physician examines the deep veins of the leg. (Fig. 3)

Differential Diagnoses

It is important to differentiate vein diseases from arterial diseases in the leg. In both cases the bloodvessels are sensitive to pressure. But it is important to know that the phlebitis patient has more pain while standing and is relieved by walking, while the patient suffering from arterial diseases (arteriitis, arteriosclerosis obliterans) has more pain when walking and feels relief when he stops walking.

Fig. 2. Meyer's vein pressure points for phlebitis.

Fig. 3. To examine the tibial vein the physician exerts strong pressure through the relaxed calf muscles.

Treatment of Phlebitis

Since the author considers rheumatic diseases only as symptoms of phlebitis, the treatment is the same as for phlebitis.

The author has all his patients examined by a competent oral surgeon. X-rays of both maxillae are required for the detection of infected teeth and root fragments. Devitalized teeth should always be removed. As most impacted teeth are infected, their removal is necessary.

Infected tonsils are diagnosed by inspection and suction. Important is the palpation of the submaxillary lymphatic glands. If they are tender to pressure, the tonsils or tonsil stumps should be examined and eventually removed by a throat specialist. After removal of infected teeth or infected tonsils the infection in the jugular veins often disappears by itself. When jugular phlebitis persists after removal of oral infections it is advisable to treat the neck with cold compresses (capillary exercisers) or short wave. In severe cases leeches are used.

In treating phlebitis, two purposes must be achieved at the same time. One is to cure the phlebitis, the other to prevent the detachment of a blood clot.

Phlebitis can only be cured by removing the congestion, that is, by restoring the normal flow of venous blood to the heart, and at the same time by increasing the supply of arterial blood in order to supply abundant nourishment for the recovery of the weakened tissues. My method of treatment, which I have used successfully for years, actively increases the flow of venous blood to the heart; it brings a more than sufficient amount of fresh arterial blood to the infected area; and it prevents the detachment of a thrombus with almost absolute certainty. The patient is not confined to bed; on the contrary, he must do a good deal of walking. And last but certainly not least, *with this method every case and all forms are cured.* It is to the merit of the late Dr. H. Fischer to have originated the ambulatory treatment of phlebitis. After having been trained by him, the author modified his treatment considerably. I have used the combination pressure bandage (Contura and Plasto) for many years with excellent results.

The technique is simple. (See Fig 4*). The patient lies on a flat table. After protecting ankle and knee, the leg is loosely covered with a Contura bandage. Then, over the Contura bandage, a three inch wide Plasto bandage is applied with strong pressure.

The combination of the medicated Contura bandage and the Plasto bandage provides an *elastic* compression

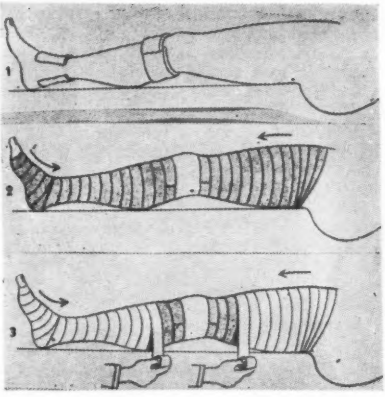


Fig. 4. Application of Contura and Plasto bandages.*

1. Protect instep, Achilles tendon, and region directly below knee with gauze spread with vaseline.
2. Apply Contura bandage loosely.
3. Apply Plasto bandage over Contura bandage with strong pressure.

which is adaptable to the function of the muscles and joints. The soft Contura bandage does not become stiff like Unna paste bandages, and it moves with the muscles. The medication in the Contura bandage prevents irritation of the skin so often seen after the direct application of the elastic adhesive bandages, and it makes a comfortable treatment, even of long duration, possible. Also the change of the bandage is easy, as the Contura bandage does not stick to the hair of the leg. Therefore shaving of the leg is not necessary.

The application of the Combination bandage (Contura plus Plasto) incorporates all the advantages of Unna's paste bandages and the elastic adhesive bandage without their disadvantages. The Contura bandage remains wet and pliable under the Plasto bandage. The soothing antiphlogistic medication of the Contura bandage protects the skin and facilitates the removal of the bandage.

In treating the legs below the knee, the bandage is started directly behind the toes and is wound up to the knee. The bandages are wrapped around the leg in the direction of the heart. They must cover the foot, heel, and calf. Only the toes remain free.

In treating the thigh, the bandage starts with strong pressure as high as possible near the Poupart's ligament and

*Courtesy of Medical Fabrics, Inc., Patterson, N. J.

is wrapped around the thigh in the direction of the knee to a point directly above the knee. In order to prevent detachment and passage of a thrombus, it is necessary to apply several layers of Plasto bandage with maximal pressure at the upper (proximal) end of the thigh.

The knee remains as a rule free. If it is necessary to bandage the knee, the technique is the same as above. After the popliteal space has been well padded with cotton, the Contura bandage is applied loosely, and then the Plasto bandage is applied under "optimal" pressure.

The pressure must be even. If the correct pressure has been applied, the patient will feel a relief of pain immediately. If the pressure is too strong, the patient will complain about severe pain almost immediately after the bandage has been applied. He can bear excessive pressure for only a few minutes. If the bandage is too loose, the pain which the patient felt before application of the bandage will not stop. Then more pressure has to be applied.

In almost all cases of phlebitis of the legs it is necessary to apply the bandage not only to the lower part of the leg, but also to the thigh, even if there are no apparent signs of phlebitis in the thigh. Careful examination by palpation will disclose in almost all cases an inflammation of the deep femoral vein. It is obvious that the inflammatory swelling of the femoral endothelium interferes with the drainage of the venous blood and produces congestion in the lower leg.

It need hardly be mentioned that this method can only be applied in cases of phlebitis where the thrombosis does not involve the large vessels of the abdomen.

The pressure bandage treatment is contraindicated in the very rare cases of purulent thrombosis.

After application of the bandage the patient is told to walk as much as possible, at least three miles daily, and to avoid standing.

The bandage is changed at first every third day, and later twice weekly. The swelling decreases rapidly under the bandage, especially the often enormous edema found in acute phlebitis. In these cases the bandage must be renewed as soon as it becomes loose, if necessary daily for the first days.

Pain disappears as a rule immediately on application of the bandage, or at least decreases considerably. There is practically no danger of embolism if the bandage is applied with sufficient pressure and up to a point above the thrombus.

The treatment has to be continued until Meyer's Pressure Points are no longer sensitive to pressure.

The modified Fischer treatment with the Contura and Plasto bandages is effective in acute, chronic, and latent phlebitis; and in their complications, namely, phlebitic ulcer and phlebitic eczema. It also is effective in most cases of varicose ulcer and varicose eczema, because varicosity is mostly complicated by a latent phlebitis in the deep veins, and the pressure bandage will remove the congestion in the legs.

In treating ulcers and eczemas of the leg with the modified Fischer treatment, the ulcer or eczema is first covered with a suitable ointment (cod liver oil) and a piece of gauze. Then the Contura and Plasto bandages are applied as described above.

Conclusion

The most important infection that causes rheumatism is latent (concealed) phlebitis. This latent phlebitis in the veins is the point where toxins are produced. The joints, the nerves and the muscles are the points where the toxins attack. From the point of production the toxins are carried to the point of attack by the blood.

Therefore, the only logical treatment in these cases is to remove the central seat of the infection where the bacterial poison is produced, namely the concealed infection in the veins.

Oral infections should be removed before the treatment of phlebitis is started.

200 West 54th Street.

BIBLIOGRAPHY

1. Meyer, Otto: Latent Phlebitis as a cause of Rheumatism. *Rheumatism*-Journal (London), January, 1939.
2. Dietrich, A.: Die Ausbreitungsweise der tonsillogenen Sepsis. *Zeitschr.f. Laryngol. Rhinol.* 23 H. ¾.
3. Siegmund, Herbert: Ueber die akute Entzuendung der Halsvenen bei odontogenen Kiefererkrankungen. *Deutsche Zahnheilkunde* 74 S. 56/61.
4. Hall, Colby: Sepsis following pharyngeal infections. *Annals Otology, Rhinology* etc. December 1939, 48:905-925.
5. Meyer, Otto: Focal Infection and Phlebitis. *Clinical Medicine*, December 1943, pg. 311-314.

The Present Status of Intravenous Urography

By W. E. HATCH, M.D., *Duluth, Minnesota*

History

TO EVALUATE most therapeutic procedures, various tests and operative and diagnostic technique, time is an important factor. It is now over ten years since Von Lichtenberg, Benz, Swich and other coworkers began their studies to find a means whereby vizualization of the urinary tract could be possible by the intravenous route.

The earliest experiments attempted to utilize sodium iodide as a media. Enormous doses were administered and Braasch and others found it unsatisfactory as a diagnostic aid due to the fact that the patients experienced many unpleasant reactions and the outlines were faint and indistinct and generally unsatisfactory.

With the discovery of an organic iodide called uroselectan, many of these objections were overcome and with later improvements of the drug, we have preparations which have a definite practical value and are adaptable to most patients with few serious after effects. Intravenous urography then was rapidly and enthusiastically adopted by the profession and recognized as a standard reliable diagnostic aid.

Advantages

Its popularity, from the patient's standpoint is due to the fact that the undesirable features of the retrograde method are greatly eliminated as well as much of the expense. To the doctor the fact that information may be found without help from the urologist certainly is an advantage and he often resorts to this method when, otherwise, it might be omitted.

Another added feature which has been developed to the point where it has a practical value is its use as a functional test of the kidneys, opening up a considerably larger field in the study of the urinary tract. Comments of men who have had the greatest experience and interest in this work feel one of its most important contributions is the fact that it uncovers many pathological conditions which otherwise might go unnoticed, or be discovered too late to be properly treated. The ease and simplicity prompts the examiner to resort to this checkup for less serious indications oftener than when a more complicated and difficult retrograde was the only means at our command.

No group in the medical profession has welcomed and utilized this practical aid in diagnosis more than the urologist himself who realizes the necessity of an easy means for a solution of his urological problems. The contribution of intravenous pyelography in the practice of medicine cannot be overemphasized. An index to its popularity is reflected in two hospitals in Duluth the past year. During this period over 250 intravenous studies were made in comparison to 76 retrograde examinations.

Cautions

However, this excellent method has been the cause of many sins of omission and commission. Its abuse has been apparent to me on numerous occasions and personally witnessed misuse at a well known urological center. To rely on this method, to advise, treat, or institute surgical procedures without obtaining satisfactory and complete findings, detracts from the examiner, the test itself and certainly is unfair to the patient. It is beyond my comprehension how we sometimes accept a poor or unsatisfactory intravenous pyelogram which if made by retrograde would be considered of little or no value.

More recently its role as a possible gauge of renal function is receiving considerable research interest. Some of the early research work was done by two Italians. The investigations centered on two phases of the activity of the drug—that is, the intensity of the pyelo-ureteral image and secondly the time appearance and disappearance of the shadow. Nothing much of practical value resulted, but stimulated future research. Increased knowledge of renal physiology and the behavior of various drugs, etc., will, no doubt, be the answer for a fairly simple and reliable functional test.

Research workers as Richards, Marshall, Smith, Shannon, Van Slyke and others found that the cell lining of the tubules has a highly selective action in reabsorbing material from glomerular filtrates and excreting waste substances. They found, for instance, that water is filtered by the glomeruli and reabsorbed in part in the tubules; insulin filtered by the glomeruli only; glucose is filtered by the glomeruli and entirely reabsorbed in the tubules. A similar study of diadrast, skiodan, urea, etc., has established the renal selective action upon them:

Case 1, Fig. 1

Case 1, Fig. 2

Case 1. Fig. 1. The intravenous urogram, on the left, shows a good picture of the left kidney but only a stone in the right kidney.

Case 1. Fig. 2. The retrograde pyelogram, on the right, shows the reverse: an excellent visualization of the right kidney but the left kidney is not seen as well as on the right intravenous film.

The urea "clearance test" which briefly means the determination of the amount of a certain drug (urea) excreted by the kidneys in a certain period of time, is generally used as a standard in most studies with various substances. As Drury states "the new kidney function tests have all made use of a very general principal or law—this law for any given individual is that the amount of a substance excreted is directly proportional to the concentration of that substance in the blood during the period of excretion." Braasch and his associates have made similar studies and feel it has considerable value. More recently, Findley, Edwards and others, believe their recent experiments make the application of the clearance test practical and fairly reliable.

Dye Function Test

Briefly, by their method, the dye is given as for an intravenous pyelogram and *may be done in conjunction with this x-ray study.* All urine is collected in the next thirty minutes and the amount of iodine appearing in the urine under standard conditions is determined. According to them, 45% of the injected dose in normal subjects is excreted in this thirty minute period and reductions in the rate of iodine excretion are roughly proportional to variations in the urea clearance.

Indications for Intravenous Urography.

1. The examination of children and the aged.
2. Study of the ureter after bowel implantation.
3. Study of the ureter and kidney in carcinoma of the bladder which prevents ureteral catheterization.
4. Conditions which mechanically prevent the insertion of the cystoscope, such as strictures of the urethra, bladder neck obstructions, etc.
5. To determine the integrity of the ureters after certain abdominal operations, such as hysterectomies.
6. As a test for renal function.
7. In severe accidents in which there is the possibility of renal ureteral, or bladder damage.
8. For bladder x-ray studies after the drug has accumulated in sufficient amount to outline this organ.
9. In pregnancy, where excretory urography finds a limited use. However, the visualization of the lower third of the ureter is rarely satisfactory and the danger of the fetus from multiple x-ray exposures should be kept in mind.

Contraindications

1. Marked renal insufficiency (uremia or impending uremia).
2. Marked cardiovascular diseases, such as
   (a) coronary disease.
   (b) advanced myocarditis.
   (c) decompensation.
3. Marked impaired hepatic function.
4. Active tuberculosis.
5. Hyperthyroidism.
6. Iodine idiosyncrasy.
7. Hyperpyrexia.

Indications for Retrograde Urography.

1. When disease of the bladder is suspected, such as stones, growths, diverticulae, anomalies, etc.
2. Necessity for determination of kidney function.
3. Separate collection of urine from kidneys for microscopic study.

Case 2. Fig. 3. The intravenous urogram gives very little information (on the left).

Case 2. Fig. 4. The retrograde pyelogram proves that the patient has fairly good kidneys.

Case 2, Fig. 3 Case 2, Fig. 4

4. Contraindications for intravenous pyelography such as iodine idiosyncrasy, hyperthyroidism, etc.
5. When pelvic lavage, dilatation of ureters or kidney drainage via ureteral catheters is necessary.

Contraindications

1. Conditions in which serious trauma or infections might result.
2. Children and the aged.
3. When it is desired to determine merely the existence of a kidney or its relation to other organs.
4. In check-up following various types of operations such as a hysterectomy, ureter-intestinal implantation, etc.

Reactions to Intravenous Injection

Mild reactions such as a feeling of warmth, dryness of the throat and mouth and flushing are not uncommon following intravenous injection. More serious reactions may follow such as choking, palpitation, syncope, nausea, vomiting, tachycardia, pain at site of injection, acute renal pain, urticaria with swelling of the tongue, lips or eyes.

Tests for Sensitivity

Patients in whom a reaction might be suspected, may be tested by putting a few c.c. of the drug on the tongue. Another method for testing for allergy is the injection of .05 c.c. intradermally. If a wheal larger than 15 mm. results, a severe general reaction may be expected if the drug is used.

Goldburgh and Baugh, about a year ago, reported a fatality after administering the drug. This is the ninth reported in the American literature and no doubt others have occurred. Practically all deaths were quite sudden and their cause ascribed to an extreme idiosyncrasy to the dye. However, sometime ago, Mayo reported over 2500 injections without a death.

Dangers of Retrograde Method

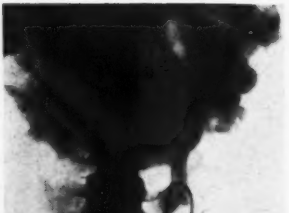
We, of course, are aware that the retrograde is not without its dangers and sometimes painful reactions follow, in spite of every careful technique. Bladders have been ruptured both intra and extra-peritoneally and complete rupture of the kidney has been reported. A not uncommon accident is an extravasation into the parenchyma of the organ and the danger of the dissemination of possibly infectious material if present. Ureters have been punctured during their catheterization and trauma inflicted in their wall.

Errors in Interpretation

It is quite obvious that our interpretation of the x-rays is extremely important and often it is necessary to resort to retrograde procedures to prove or clarify our problems involved. Most urological clinics combine the retrograde with the other studies when any doubt exists. Interpretation of films is often quite confusing at times and considerable experience is necessary often to arrive at a correct diagnosis. Normally the kidneys and ureters pass regularly through two stages of activity, systole and diastole, and the film may be distorted depending at just which phase it was taken. We should remember that the retrograde method is purely a mechanical procedure a simple filling of the renal space under a slight pressure, while the intravenous administration involves a strictly physiological process.

Intravenous urograms depend upon the secretory function of renal tissues, therefore, the most satisfactory pictures are those of normal or nearly normal kidneys and unfortunately the pathologic condition is often not seen or confuses the diagnosis. Strangely enough, occasionally, what later proves to be a normal

Case 3. Fig. 5. (a) While the intravenous urogram shows a poor left kidney, it does not tell the whole story.



Case 3. Fig. 6. (c) The retrograde pyelophrosis and hydro-ureter, and ureteral and gram depicts the extensive amount of pathologic changes actually involved: Hydronephrotic kidney and stones.

kidney will show little or no evidence of the dye and I, personally, know of several instances where the diagnosis of "dead kidney" was made without benefit of retrograde study; yet at operation a good kidney was discovered.

I have been unable to find an explanation for this phenomena in the literature or other sources. Often in these instances the opposite kidney will give a very satisfactory picture.

There is often a strong tendency when an intravenous film is not satisfactory, to blame the outcome on improper technique or poor preparation, when as a matter of fact there is simply an abnormal condition which as yet we are unable to demonstrate by this method. We should not allow ourselves to minimize its good features by an occasional disappointing one.

There are some variations in the technique to be used by different men, but most make use of counter pressure, either public or rectal, limitation of fluid intake, and catharsis.

The amount of dye to be injected should be determined also. A patient weighing 200 pounds certainly needs a much larger dose than one of 120 pounds, for instance. I believe some films are not satisfactory due solely to an inadequate dose.

In arriving at a proper diagnosis from our intravenous study, its good features as well as the unsatisfactory ones should be kept in mind, that we are dealing with a physiological process and that intravenous urograms will not always be an answer for our problems.

I firmly believe, and I do not believe it has been given sufficient emphasis, that, *when an intravenous study is not satisfactory, the kidney should be considered pathologically abnormal until proven otherwise.*

If we follow this dictum we will avoid many of the pitfalls of mistaken diagnosis and eventually discover the true condition.

REFERENCES

Baker, W. J.: Evaluation of retrograde and intravenous pyelography; collective review. *Internat. Abstr. Surg.*, 71: 540-551, 1940 from *Surg., Gynec. & Obst.*, (Dec.) 1940.

Findley, T., Edwards, J. C., Clinton, E., and White, H. L. Intravenous urography; test of renal function. *J. Urol*, 48: 119-125 (July) 1942.

Foulds, G. S., and Shannon, E. H.: Relative merits of intravenous and retrograde urograms. *Canad. M. A. J.*, 42: 547-549, June 1940.

Goldburgh, H. L and Baer. S.: Death following intravenous administration of diodrast. *J.A.M.A.*, 118: 1051-1052, (March 28) 1942.

Pendergrass, E. P.: Excretory urography as test of urinary tract function; Carman lecture. *Radiology*, 40: 223-246. March 1943.

818 Medical Arts Building, Duluth, Minnesota.

Diethylstilbestrol Therapy:* How to Control Nausea and Vomiting

By KARL JOHN KARNAKY, M.D., *Houston, Texas*

ON January 22, 1944, the Council on Pharmacy and Chemistry of the American Medical Association[1] recognized the following claims in N.N.R.:

"It has been found possible to interrupt the prolonged and excessive flowing of many women with uterine bleeding of probable endocrine origin by brief courses of intensive estrogenic therapy. This is considered safe practice only when the interval of freedom from bleeding is used to eliminate local pelvic lesions as the cause of the flowing. The subsequent administration of sequences of estrogenic substances and progesterone to reestablish cycles of flowing is a possible method of alleviating a condition which is widely believed to result from deficiency of one or both of the ovarian hormones."

It has also been found that large doses of diethylstilbestrol are of benefit in a large percentage of cases of dysfunctional uterine bleeding, in cases with myomas and so forth[2]. So, it was thought that a paper describing methods for the control of nausea and vomiting while taking diethylstilbestrol, would be some value to the medical profession.

There are six ways of reducing or eliminating the nausea from large doses of diethylstilbestrol:

1. Taking the plain 5.0 mg. tablet every night at 9:00 o'clock at night.
2. Taking one, plain, 1.0 mg. tablet for three nights, 2.0 mg. for three nights, 3.0 mg. for three nights, 4.0 mg. for four nights, and then 5.0 mg. every night thereafter for 30 nights.
3. Use of 400 milligrams of vitamin C, three to four times a day until the nausea is under control.
4. Use of sedatives. (a.) Elixir of Phenobarbital 2 grains per ounce, one teaspoonful every thirty to sixty minutes until the nausea is controlled. (b.) Better; Insert one to two, 1-grain Nembutal rectal suppositories every one to three hours until the nausea is controlled.
5. Sour milk or butter milk may be eaten, or the patient may eat crackers and drink some coffee or milk in bed before getting up in the morning.
6. Psychotherapy: The patient is told to take the plain 5.0 mg. tablet at 9:00 P.M., and told that the next morning she will be nauseated and may even vomit. Tell her that the morning after the second nightly tablet, she will be less nauseated, and the morning after the third tablet she will be even less nauseated, and the morning after the fourth tablet, even less nauseated. Tell her that after the fourth or fifth tablet she will not be sick any more except for a slight nausea every two to four weeks. Tell her that this nausea is like the nausea that she had when she was pregnant, and like the nausea that she may have should she ever have a baby. Tell her that the tablets may produce nausea, but they are not poison and that it is impossible to hurt her even if she took the entire thirty tablets as one dose. This assurance will make it possible to treat almost all cases of uterine bleeding.

In my own private practice, using the above suggestions and drugs, I have been able to have 99.9 per cent of my cases of uterine bleeding to continue the tablets. Eighty-six cases of adolescent dysfunctional uterine bleeding; one hundred and forty two adult dysfunctional uterine bleeding cases have been able to continue their diethylstilbestrol. At Jefferson Davis Hospital, Houston, Texas, more than four hundred cases of uterine bleeding associated with leiomyomata have been controlled until further studies could be done or until they could be operated upon.

In closing, I wish to emphasize one sentence in the report of the council on Pharmacy and Chemistry:

"This is considered safe practice only when the interval of freedom from bleeding is used to eliminate local pelvic lesions as the cause of the flowing."

326 Medical Arts Building.

References

1. Report of the Council on Pharmacy and Chemistry of the American Medical Association. 125-233. January 22, 1944.
2. Karnaky, K. J., Cause of Menstruation, uterine bleeding and labor—a new Theory. *Medical Times* 69:100. 1941.

*From the Menstrual Disorder Clinic, Research Division, Jefferson Davis Hospital, Houston, Texas. Permission to do this granted by the Research Committee of the Jefferson Davis Hospital.

Blood Pattern as a Clue to Diagnosis of Cancer*

By H. LEONARD BOLEN, M.D., *Fall River, Mass.*

THE early diagnosis of carcinoma is a goal eagerly sought by science. There is not space to review the various tests which have been proposed to detect the presence of cancer cells in the human body: Fuch's test in 1925, Pfeiffer's crystallization method in 1938 with personal modification by Rascher of Munich and Gruner of Montreal, the blood sedimentation rate as utilized by Hirsh, Schiller, Wolfson, and others, Goldberger's rapid bedside test (1939).

Impressed with the simplicity of Goldberger's method, the author decided to obtain a similar record of the blood on every patient, to see whether it would afford material aid in diagnosis, prognosis, and therapy. In each case, the finger of the patient was pricked, and 3 small drops of blood were collected on a glass slide and allowed to dry after the method of Goldberger. The patterns which the blood assumed, both macroscopically and microscopically, have proved of great value, especially when considered with the clinical and laboratory findings.

The most interesting phenomenon was the distinctive pattern of the blood obtained from cancer patients. The pattern characteristic of normal blood and of blood from patients with ulcer, inflammatory disease, etc., is devoid of meshwork. There is no breaking up of the fibrin; the blood is more compact. In the central part of each drop of blood is a dark agglutinated mass. Invariably, however, the pattern formed by cancerous blood is that which I describe as the "dotted curtain" type. Peripheral rings are absent, and no agglutinated mass can be seen in the center. The blood is broken down into "dots." Under the microscope the cancerous blood shows numerous three-cornered, tri-asteroid spicules scattered throughout. In no other condition have these spicules or rays been found in such abundance.

In six conditions: acute rheumatic fever, rheumatoid arthritis, active tuberculosis, pregnancy, pernicious anemia, and coronary disease a positive pattern was obtained. In all, however, the clinical findings have differentiated the condition from cancer. Moreover, the positive reaction gradually changed to negative as the proper treatment was instituted. The laboratory analysis of the blood shed no light on the problem of diagnosing cancer. The same transition from positive to negative blood pattern on the slide occurred when "cures" were obtained in cancer patients, either by total extirpation surgically of the neoplasm, or radium implantation, or deep x-ray therapy. The blood pattern was found to return to normal after an interval of about six weeks. No blood slides

*Author's abstract of an article published in *Journal of Laboratory and Clinical Medicine*, vol. 27, No. 12, pp. 1522-1536, September, 1942.

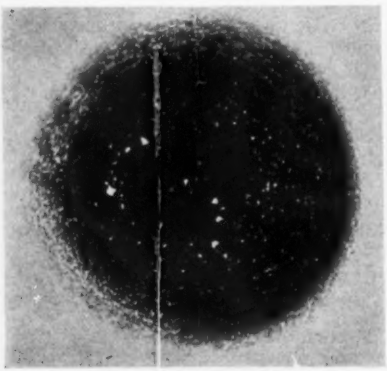


Fig. 1. Normal blood pattern (macroscopic)

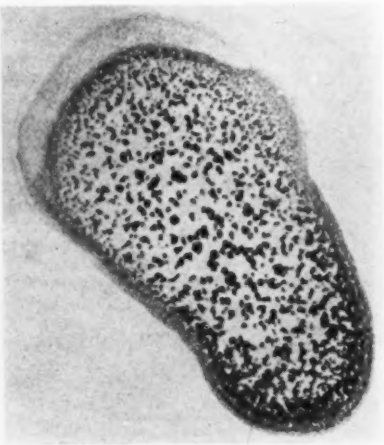


Fig. 2. Cancer blood pattern (macroscopic)

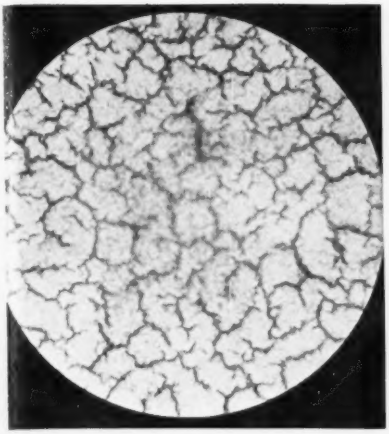


Fig. 3. Normal blood pattern (microscopic)

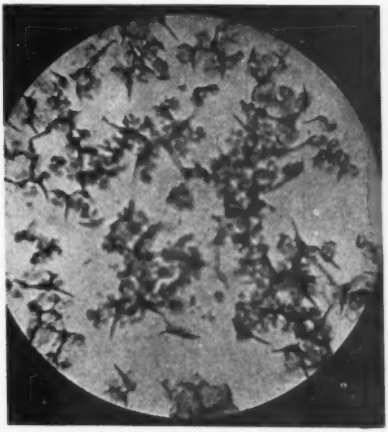


Fig. 4. Cancer blood pattern (microscopic)

on patients apparently cured after operation have been made sooner than six weeks after surgery, radium implantation, or deep x-ray therapy.

A series of slides (over 4000 in all) was taken in each case. In a non-cancer group of 132 cases the blood pattern test showed: 130 cases negative and 2 cases positive, or 1.5% positive. In a cancer proved group of 140 cases the blood pattern test showed: 12 cases negative and 128 cases positive, or 91.4% positive.

In this latter group, the red blood cell count, white blood cell count, and hemoglobin were of no help in differentiating between the cancer and non-cancer cases.

Thus, this blood pattern test on the slide, when employed routinely, is of great value in suggesting, at least, the presence of carcinoma before it is discovered clinically or by roentgen ray.

1524 South Main Street.

COMING ARTICLES

What Is Psychosomatic Medicine?

Low Back Injuries

Office Use of the Sedimentation Test

Accuracy in Diagnosis

Clinical Significance of the Rh Factor

Inguinal Hernia: Its Structure and Repair

Clinical Symptoms of Arteriosclerosis

Allergy in General Practice

Treatment of Compound Hand Injuries

Complete Decongestion Method in Treatment of Head Cold and Sinusitis

The Sublingual Administration of Drugs*

By R. P. WALTON, M. D.,† *Charleston, S. C.*

THERE are frequently recurring expressions in the literature to the effect that all potent, non-irritant drugs can be effectively administered by simple application to the oral mucosa. Recently there were recommendations that morphine be administered sublingually in war emergencies. There are contradictory opinions on these points and, actually, very few drugs are routinely given by this method despite its evident simplicity and convenience.

This article summarizes evidence to the effect that only a select few of the many eligible drugs can be absorbed systemically through the oral mucosa. The evidence has been obtained in animals (chiefly dogs) and in human subjects in which the systemic drug effect served as a bio-assay of the extent of absorption. With dogs, a number of the drugs were tested by observing their effects on tracings of gut and uterine fistula tone changes, others were tested by observing the extent of anesthesia or of convulsions. Also, drugs were administered experimentally to normal human subjects and, in clinical trials, to groups of patients.

Drugs which have been shown to be appreciably absorbed through the oral mucosa are glyceryl trinitrate (nitroglycerin); erythrityl tetranitrate (erythrol tetranitrate; testosterone; methyl testosterone; testosterone propionate; estradiol, diethylstilbestrol; anhydrohydroxyprogesterone; desoxycorticosterone acetate and apomorphine. As a matter of toxicological interest, nicotine and probably cocaine are well absorbed sublingually. Among those which have been found practically useful by this route, the usual dose is about 2 to 4 times the amount which would be given by injection. Usually the dose is much less than the swallowed dose; several of these drugs, in fact, are hardly effective at all when swallowed. Sublingually they are administered in tablets, in alcohol solutions, in propylene glycol solutions, or, if an alkaloid salt, in simple water solution.

Evidence is cited showing the ineffectiveness of the following drugs when applied sublingually in any safe or practical dosage: morphine, codeine, dilaudid, diacetyl morphine, ergonovine, atropine, mecholin, barbiturates, strychnine, picrotoxin metrazol, hydrocyanic acid, epinephrine, ephedrine, strophanthin and insulin. As a final demonstration of the ineffectiveness of some of these drugs by the sublingual route, relatively large doses were taken sublingually by normal subjects without experiencing anything more than the mildest subjective effects. Some of the doses administered were: morphine 120 mg. (2 grains); dilaudid 15 mg. (¼ grain); diacetyl morphine 15 mg. (¼ grain); regonovine 2.5 mg. ($\frac{1}{25}$ grain); atropine 15 mg. (¼ grain); mecholin 400 mg. 6¼ grains); sodium pentobarbital 250 mg. (4 grains); and epinephrine 3 mg. ($\frac{1}{20}$ grain). Also, relatively large doses of metrazol, hydrocyanic acid, strophanthin and insulin have been given sublingually to human subjects without significant effects.

From this number of drugs, a certain correlation is evident which indicates an important factor in determining this selective penetrability through oral mucosae: *Those drugs which have a high fat solubility or, more usually, a high fat-water distribution coefficient are likely to be well absorbed. Those which have a low fat-water distribution coefficient are not effectively absorbed sublingually.* With a group of alkaloids, most of which were not practically effective in human trials, large doses were administered to dogs sublingually in order to determine the minimum dose which would produce demonstrable effects sublingually. This series of experiments demonstrated that penetrability of these alkaloids correlated with their fat-water distribution coefficient. A simple explanation for the phenomenon of selective penetrability and its correlation with fat-water distribution coefficients is based on the assumption that drugs dissolved or suspended in aqueous fluids of the mouth pass directly into the protoplasm of the squamous epithelium by virtue of affinity for the fat of the protoplasm. Passage into the mucosa is then determined by the same factor which determines the distribution of the drug if introduced into an *in vitro* fat-water system, i.e. its distribution or partition coefficient. (This coefficient is by definition a measure of the relative affinity of a substance for fat and for

*Abstract by the author from the *Journal of the American Medical Association*, 124: 138-143, 1944.

†Dept. of Pharmacology, Medical College of South Carolina.

water.) A number of other factors are undoubtedly operative, as irritation, alkalinity, absolute dosage, etc., but within limits the above correlation has validity. It is suggested that this simple *in vitro* characteristic of drugs can serve as a useful guide to the recognition of other drugs, particularly of new drugs, which may be administered by this technique.

Nutrition

"The Penalty of Overeating"

By NATHAN SMITH DAVIS, III, M.D., F.A.C.P., *Chicago, Illinois*

MANY find it hard to believe that it is possible for people who are obese, to be mal-nourished. In spite of the fact that their diets must have been high in caloric value to enable them to become over-weight, many of them are at least relatively deficient in certain of the essential amino acids, fatty acids, minerals or vitamins. The individual who has eaten a lot of sweets, of un-enriched white bread and potatoes, generous helpings of muscle cuts but very few fruits or green and yellow vegetables is almost certain to have a diet that is deficient in vitamins A, in parts of the vitamin B complex and in vitamin C.

Furthermore many of the much advertised reducing diets are deficient in certain of these essentials. Almost every obese individual has at one time or another tried to reduce by following such advertised diets. Many have made themselves ill by following them for a long time. Others have taken drugs or thyroid extract to increase their caloric requirements so that they may lose weight without dieting and as a result have become seriously ill.

Obesity usually has its inception when, because of change in occupation or advancing years, people become less active physically and so require fewer calories. They have become accustomed to eating large quantities of food during the growth period and while active in athletics or engaged in hard manual labor and continue to eat the same quantity even though they no longer require so many calories. During pregnancy and while nursing her baby, the young mother gets in the habit of eating enough to satisfy both herself and her baby. She continues on that diet after the baby is weaned. Of course she starts to gain in weight.

As men and women get heavier, they become less active physically and if their intake of food is not reduced, they continue to gain. Many will start to exercise in hopes of losing weight and are disappointed because the best they seem to be able to do is to stop gaining. The exercise makes them more hungry and so they eat more and lose no weight.

Yet people should not be allowed to suffer the penalty for obesity. It is possible to lose weight on a diet low in caloric value, which contains adequate amounts of all of the essential nutriments. Exercise makes it more difficult to follow a low caloric diet as it increases the reduction in blood sugar and so causes abnormal hunger.

A diet containing all of the foods recommended by the Food and Nutrition Board of the National Research Council as containing all essential vitamins, proteins and minerals, in the quantities specified contains from 1200 to 1500 calories if the only foods consumed are the ones listed as required. It makes an excellent reducing diet. Butter, cream and other fats and oils and all sweets and cereals must of course be avoided. It is easier to follow such a diet if a "snack" is taken in the middle of the morning and afternoon and before going to bed to prevent hypoglycemia and an abnormal appetite but such "snacks" must not be in addition to the specified amounts of essential foods.

On this diet, the obese individual would be permitted to consume one pint of skim or butter milk or one ounce of cheese a day; one serving of white or sweet potatoes a day; one slice of whole wheat or enriched bread or one small serving of whole grain cereal at meals at which no potatoes are eaten; one serving a week of mature dry legumes and nuts; two servings a day of citrus fruits or tomatoes; two servings a day of leafy, green and yellow vegetables and one of other vegetables and fruits; one or two eggs a day; and one or two servings a day of lean meat, fish or poultry.

700 N. Michigan Blvd.

Tyrothricin

By W A. NEWMAN DORLAND, A.M., M.D., F.A.C.S.
Chicago, Illinois

The fight against infection has been making astounding progress since the war began. Hospital gangrene, which claimed such a heavy toll of life during the civil war, practically disappeared with the advent of modern antisepsis; and the gangrene resulting from the action of the gas bacillus, which was such a serious problem for the surgeons of World War I, quickly came under control when its nature was understood. From the amazing developments in the management of streptococcic, staphylococcic and other infections thus far during the present war it seems probable that even more spectacular results than these will be recorded in surgical history.

The three outstanding agents recently employed in combating infection are blood plasma, the sulfa drugs and penicillin. Medical literature is filled with reports of the great value of these substances in the treatment, and prevention, of various forms of bacterial infection, even including gonorrhea. Penicillin has been called the "wonder drug," and discounting the popular tendency to exaggerate its beneficial action there is no doubt that it is the most remarkable addition to our pharmacopoeia in recent times. Now it seems there must be added a fourth substance which bids fair to outdistance penicillin in its miraculous effects. This is the new drug, tyrothricin, which has recently been presented to the profession by a scientist of the Rockefeller Institute of Medical Research, Rene J. Dubos.

There is probably no more beautiful example of logical deduction in medical research, than Dubos' discovery of tyrothricin, which is an extract derived from the soil bacterium, *Bacillus brevis*. It resulted from his efforts to discover why the soil so quickly destroys the most malignant germs known to man, such as bubonic plague, tuberculosis and smallpox. Evidently this must be done by other germs whose normal habitat is the soil. The problem was to isolate these beneficent germs, and here is where Dubos' ingenuity came into play in a remarkable exhibition of laboratory experimentation.

He filled three glass tumblers with soil, which he presumed contained the beneficent germs, and daily watered each with a culture of a virulent germ—one, a culture of Staphylococci, the pus forming bacteria; another with a culture pneumococci bacteria; and the third with a culture of virulent streptococci. This daily process was continued for months until the soil in the tumblers was, conceivably, thoroughly impregnated with the germ destroying bacteria which, presumably, had been growing and thriving on the malignant cultures fed to them. Then into test tubes containing a milky culture of pneumococci, Dubos dropped a minute portion of the soil from one of the tumblers, and started a microscopic examination of the result. Almost at once remarkable changes occured. The milky appearance disappeared, and under the microscope lens the pneumococcus was seen with a short rod microbe (the *Bacillus brevis)* attached to it. Quickly the virulent germ was dissolved and only the rod bacillus remained.

Dubos now cultured the *Bacillus brevis* and isolated the chemical substance thus produced. This he named "tyrothricin." Experimenting with this on mice he found that the mouse into whose peritoneal cavity a large quantity of pneumococci had been placed followed by the injection into the cavity of one ten-millionth of an ounce of tyrothricin survived, while the control animal without the tyrothricin promptly died.

There arose an apparently insuperable obstacle. He found that when injected into the blood-stream tyrothricin quickly destroyed the red corpuscles, and when introduced into the stomach it was speedily destroyed by the gastric juice. It was found, however, that it was not destroyed by the body-fluids—Saliva, urine, pus, serum—but in their presence promptly destroyed the toxic germs. The clinical application of the drug was in the body-cavities—the bladder, the thus determined. It may safely be used pleural sac, the nasal sinuses—as well as in the treatment of surface infections.

The clinical record thus far has been most gratifying. When sprayed on chronic leg-ulcers which for years have resisted all treatment, the bacteria disappeared within twenty-four hours and healing resulted in from two to three weeks. Neglected wounds of the extremities and of the hard palate were healed

as if by magic. When a minute quantity of the drug was introduced through the drainage tube into the pleural cavity in empyema the chest fluid was sterilized within a few hours and complete cure soon followed. The drug has been found successful in nearly 100 per cent of carbuncles, abcesses and infected ulcers; in about 80 per cent of infected sinuses; in 75 per cent of middle ear infections; and in almost all cases of so-called "shipyard eye" in which it has been used. In operative wounds, when applied on the dressings, fever and swelling were reduced to the minimum.

While not an absolute germicide, tyrothricin does destroy streptococci and pneumococci in every instance. It is, therefore, a wonderful addition to the sulfa drugs and penicillin and must take its place with these remedies in the surgical equipment for the treatment of bacterial infection. Tyrothricin will bear close watching, and most interesting results from its use may be anticipated.

1236 N. Dearborn Parkway

The Vagohypotonic Individual

By DAN G. STINE, M.D., *Columbia, Missouri*

SINCE the days of Greek medicine, physicians have been aware that individuals belonging to special physical and mental types were predisposed to certain disease entities. We accidentally stumbled on such a type in the Student Health Service at the University of Missouri, during a cardiac survey.

As a result of ten years of observation of the hearts of athletes at the University of Missouri, we demonstrated to our satisfaction that only a small percentage of the hearts of athletes developed hypertrophy, and that a careful examination of these hearts showed some cardiac damage was responsible for the hypertrophy.[1]

To aid us in understanding the ability of an individual's heart to respond to the muscular efforts of his body, we devised a cardiac function test in which the heart rate was observed during exercise to the point of exhaustion. We found this useful in detecting minor cardiac damages.[2,3]

In doing this test on several hundred athletes, it was found that a certain type of individual with a normal heart had poor control over his cardiac rate during muscular exertion. This same individual had a poor cardiac response to emotion and to cold and gave many other evidences of autonomic imbalance. We classified this group as vagohypotonic individuals.

Carrying the use of this cardiac function test outside of the group of athletes, it was found that a definite percentage of the student body belonged to the vagohypotonic group. In this rather large group was included a small group of students that were under observation in the Student Health Service because of arterial hypertension.

On observation, it was found that the hypertensive students had certain physical and mental characteristics that were common to the entire vagohypotonic group. The hypertensive student had a marked family history of arterial hypertension.

A small group of students with a family history of arterial hypertension and a vagohypotonic response to the cardiac function test, but having a normal blood pressure on entrance to the University, were picked to be observed during their four years of university residence. Almost 50 per cent of these students developed arterial hypertension before leaving the University.

We are attempting to use the four years of university residence to teach the whole vagohypotonic group to understand their condition of autonomic imbalance and to correct it by drills in muscular relaxation and selected reading. The group of students that we have under observation for allergic sensitivity also belongs to the vagohypotonic group.

In comparing the vagohypotonic group with the much larger group of normal students it was found that the vagohypotonic student was taller and heavier than the average of the nonvagohypotonic students and was better developed muscularly. However, he showed much more muscular tenseness and the inability to relax muscularly with rest. He flushed more readily, and was prone to have a spastic colon and to develop

peptic ulcers. Mentally, he was a good student; he took life seriously and was less prone to go to others for advice, and he was rarely a patient in the Personality Adjustment Clinic of the Student Health Service.

It was decided to study 24 youthful, nonathletic, hypertensive students and an equal number of youthful vagohypotonic individuals with normal blood pressure levels, picked by the cardiac function test, to see the response to emotional disturbances and to the cold pressor test. A control group of an equal number, giving a normal cardiac function test, was subjected to the same tests.

The hypertensive and the vagohypotonic individuals without hypertension gave exaggerated blood pressure reactions to emotional stimuli. The normal controls gave slight or no blood pressure reactions to emotional stimuli.

The cold pressor test caused a more marked blood pressure reaction in the hypertensive-vagohypotonic group, than in the nonhypertensive-vagohypotonic group, or in the normal group, but there was nothing consistent in these findings. However, a middle-aged group with early arterial hypertension gave a much more exaggerated blood pressure reaction to the cold pressor test.

The striking findings in the hypertensive patients were:

1. Family history of hypertension in the immediate family in all but five, while six nonhypertensive-vagohypotonic individuals gave a family history of hypertension and no controls gave such a family history.

2. The superabundance of males showing hypertension, there being just one female in the 24.

3. The number of students that were selfsupporting in whole or in part, and, probably as part of the same picture, the number that had harassing personal problems.

Dr. Fred McKinney, Psychologist in the Student Health Service, summarized their mental attitude as follows:

"1. The vagohypotonic group was much more conscientious about school work. They made better grades, studied more, had a more systematic plan of study, and were more intent upon improvement. As a result, they participated less in extracurricular activities, had fewer dates, and went to fewer dances. They seemed much more serious in attitude. They believed they wasted more time than normal students. The vagohypotonic students do more and better school work.

"2. Vagohypotonic students seem to feel more inferior than the typical student. They think their appearance is below average. They do think, however, that they are smarter. They seem to take minor matters in their environment more seriously than do the normal students. They comment on more trivial matters.

"3. Vagohypotonic students are more concerned about the impression their behavior makes on others. They say they are less well-oriented to their environment. They usually have a purpose but feel they are not reaching this objective—another aspect of their overconscientiousness. When they are asked to describe their own personality, these characteristics stand out as distinguishing them from the normal: Restlessness, overconscientiousness, nervousness, emotionalism, sensitiveness, loneliness, and industriousness."

The vagohypotonic individual can be identified easily by the observance of his pulse rate at rest and at work, by his blood pressure response to emotion, and, less accurately, his response to cold. He is large, well-developed muscularly, flushes readily, sweats easily, his muscles at rest are tense, he is prone to attacks of tachycardia and spastic colitis, and he winks frequently. Mentally, he seems to be a serious-minded perfectionist who has never learned to play; one who is probably overcompensating for some real or fancied personal handicap. If he has not developed arterial hypertension in early life, he is likely to in later life, and he will likely transmit this tendency to his offspring.

We feel that this condition is a correctible one and that the four years of university life offer an opportunity to teach each vagohypotonic student to rationalize his personal problems; to teach him to work without developing nervous tension, which is reflected in his muscular tension, and, above all, to teach him to play and take his career as one of the enjoyable but not too serious episodes of his life.

References

1. Stine, D. G., The Meaning of "Athletic Heart" Among University Athletes, Lancet, 58:405, 1938.
2. Stine, D. G., The Effect of Work Upon the Heart, *J. Missouri M.A.*, 35:443, 1938.
3. Stine, D. G., A Method of Testing Cardiac Function, *Ann. Int. Med.*, 13:807, 1939.

Sigmoidoscopic Diagnosis of Systemic Disease

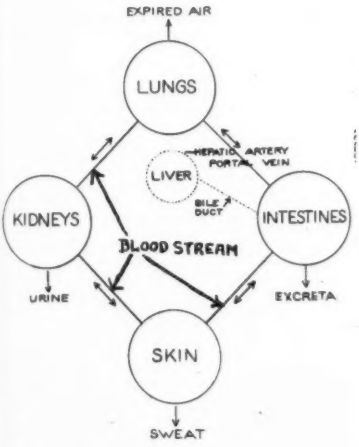
By JOSEPH FELSEN, M.D., *New York, N. Y.*

IN the sigmoidoscopic diagnosis of systemic disease by the general practitioner, it is helpful to have a basic knowledge of the underlying intestinal pathology. The examination is carried out as in the case of a routine sigmoidoscopy, being careful that a preliminary cleansing enema of water or normal saline be used. A clean mucosa is essential for proper interpretation of the lesions. Usually they can be diagnosed without the aid of red or green filters, but the filters are helpful in diagnosis. Ordinary green or red cellophane bound between two glass lantern slides will suffice without the necessity for purchasing expensive colored glass filters.

Any type of well-illuminated sigmoidoscope may be used in identifying these lesions.

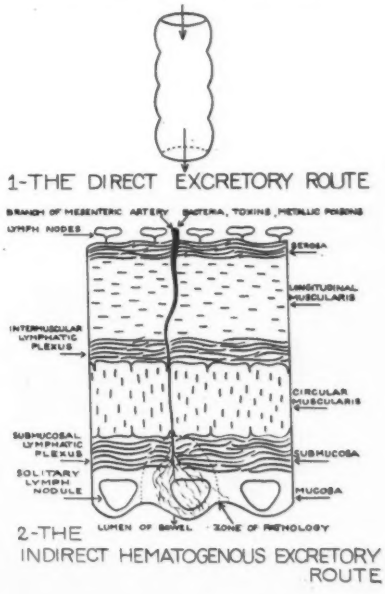
[Dr. Felsen's illustrations showing sigmoidoscopic appearance of arteriosclerosis appeared in CLINICAL MEDICINE, April, 1944. ED.]

The Reciprocal Excretory Mechanism of the Body



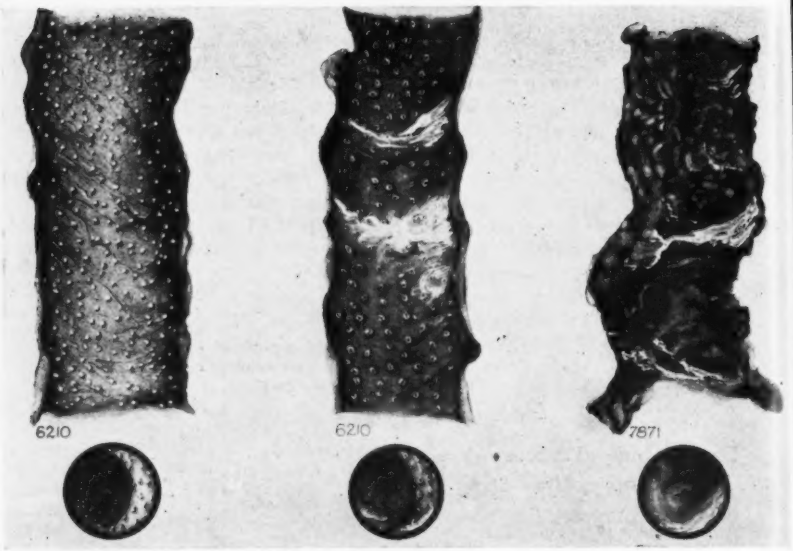
The Reciprocal Excretory Mechanism involves the four chief organs of excretion, integrated in their action by a common medium of exchange—the blood stream. When one is disabled such as the kidneys, the others attempt to take over the function of the damaged organs (e.g. uremic frost on the skin; uremic breath). Similarly, the intestines excrete toxins and other noxious substances which reach the wall from other ports of the body by the indirect hematogenous route.

The Dual Excretory Mechanism of the Intestines



Acute Bacillary Dysentery

Characteristic Three Stage Pathology

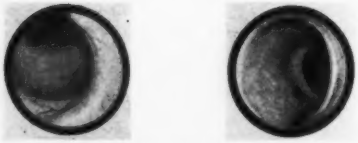


STAGE I
Lymphoid Hyperplasia

STAGE II
Punctate Follicular Necrosis

STAGE III
Confluent Ulceration

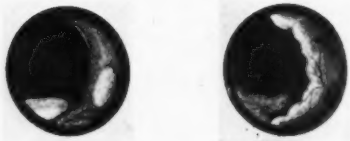
Plumbism



Diffuse or stippled, black or slate colored mucosa, due to deposition of lead sulphide. Seen particularly in patients having abundant hydrogen sulphide in intestinal flatus.

Pathology: Punctate deposition of black particles of lead sulphide about smaller mesenteric arteries; thickening of arterial wall with proliferative endarteritis. Lead excreted along entire intestinal tract. May be seen when lead line on gums is absent due to good oral hygiene. (Observations limited to three cases.)

Intestinal Allergic Manifestations



Intense hyperemia and edema of intestinal mucosa, sometimes associated with definite wheal formation (tissue eosinophilia present).

Meningococcus Bacteremia

Purpuric eruptions with diffuse toxic lymphoid hyperplasia and intense vascular congestion. Note vascular tufts embracing hemorrhagic Peyer's patch.

Tuberculosis

Transverse girdle ulcers of mucosa with undermined edges and necrotic bases. Intervening musoca not inflamed.

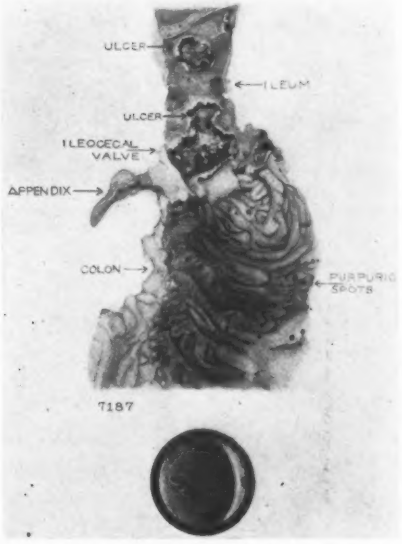
Peritoneal aspect of ulcer showing characteristic beading of lymphatics which are plugged with tubercles.

Pharyngogenic Hematogeenous Streptococcic Peritonitis

(So-called "Primary Peritonitis")

Focal hemorrhagic necrosis due to action of toxin on mesenteric vessel.

Myeloblastic Leukemia



Focal deposits of myeloblastic tissue with subsequent necrosis and ulceration. Gross appearance similar in chronic myeloblastic and acute lymphoblastic leukemia.

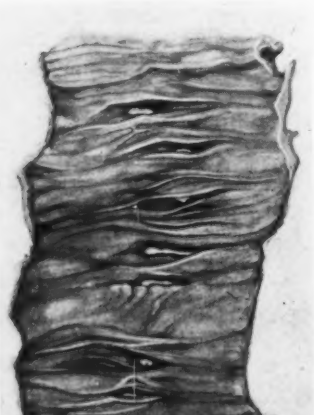
Streptococcus Viridans Bacteremia

Subacute bacterial endocarditis. Embolic lesions in smallest branches of mesenteric artery as reddened spots with pale centers. When a large vegetation breaks off from heart valve, main vessel may be blocked (mesenteric thrombosis).

Staphylococcus Bacteremia

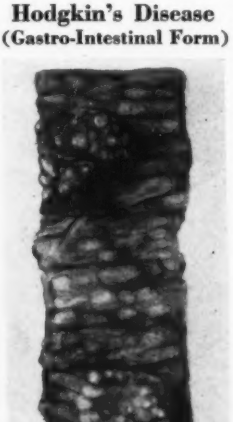
Embolic lesion of mesenteric vessel. Lesion projects above surface of mucosa.

Uremia



Ulcers discrete and not undermined. Intervening mucosa generally the seat of hemorrhages; vessels tortuous and thickened.

Hodgkin's Disease
(Gastro-Intestinal Form)



Focal infiltrations of stomach and intestine associated with generalized abdominal lymphadenopathy. Necrosis and perforation may occur. Masses are radiosensitive. In this case there was an active pulmonary tuberculosis.

GRADUATE COURSE

Clinical Office Notes

Rapid Rehabilitation Following Certain Shoulder Injuries*

By HAROLD LEFKOE, M.D.,
Philadelphia, Pennsylvania

CONVALESCENCE, after fracture or dislocation at the shoulder joint, is notoriously long. The bug-a-boo of a stiff painful shoulder is always facing the unwary practitioner, who may hold in hand an X-Ray film showing perfect anatomical alignment and excellent callus formation, yet see standing before him an individual completely unable to use his hand and forearm because of shoulder pain and disability.

The author presents a technic in the treatment of certain shoulder disabilities which combines a highly satisfactory method of treatment of the local lesion with a desirable method of local physical therapy. In his hands, this treatment has given excellent results and he presents it for rapid rehabilitation of these patients.

The "hanging plaster cast" previously used by others for fractures of the humeral shaft is applied in the shoulder cases, ranging from scapular fractures to fractures of the surgical neck of the humerus. A circular, well padded plaster encasement is applied from high up in the axilla down to the wrist, with the elbow at right angles and the forearm in neutral position. A small shelf-like prolongation along the ulnar surface of the hand gives relief to the hand, which might otherwise drop and cause pain at the wrist. Muslin bandage around the neck is attached to the plaster at the wrist, and no sling is used to support the elbow. In this manner, the entire weight of the upper extremity and the plaster is hanging from the neck and from the shoulder, thus applying effective traction to the muscles of the shoulder girdle.

The author then explains how this traction allows painless movement by relaxation of the ordinarily tight, spastic muscles. He then helps still further by the use of careful, guided, active motion of the shoulder joint. This is done in a purposeful manner, attention being paid to abduction, adduction, flexion, extension, elevation, and internal and external rotation of the arm. Care is taken that the scapula is immobilized in these motions, for all too often a painful shoulder shows apparently good shoulder motion, which is in reality accomplished by rotation of the scapula on its own axis.

The end results of this method of treatment are excellent. The hanging plaster is apparently a simple, effective, comfortable, ambulant method of treating certain fractures of the shoulder. Guided active motion to the shoulder joint following trauma, utilized with the hanging plaster, preserves muscle strength, promotes circulation, prevents adhesions, and results in unusually rapid rehabilitation.

1824 Spruce St.

*Author's abstract of an article published in *Archives of Physical Therapy*, June 1943.

◆

Hanging Cast for Fractures of Humerus*

THE application of a loose fitting circular cast (see Fig. 1.) composed of three to four rolls of 4 inch plaster reaching from the wrist to a comfortable height in the axilla is the "hanging cast" treatment of humerus fractures.

The cast functions by gravity traction, being suspended near the wrist by a sling around the neck. A piece of felt is embodied in the cast and placed over the ulnar styloid process (medial surface of wrist). The elbow is flexed at right angles and the forearm placed in mid position between pronation and supination. A pad in the axilla or near the elbow and shortening or lengthening of the sling, will easily correct any undue angulation of the fragments.

Instructions to the patient: The patient is told to keep the cast hanging at all times and not to allow it to rest

*C. M. BURGESS, M.D. in *Hawaii Med. J.*, Apr. 1943.

Fig. 1 Hanging Cast

on the arm of a chair or other convenient ledge.

Manipulation is occasionally necessary before the cast is applied, but in most cases satisfactory reduction will take place. The method is applicable to nearly all fractures of the humerus, except those involving the supracondyalar area (elbow fracture).

Results have been very good as far as rapid union and alignment goes, and there is very little stiffness of the shoulder.

◆

Heart Disease*

By ROBERT S. BERGHOFF, M.D.
Professor of Medicine
Loyola University, Chicago, Illinois

Coronary disease may be considered as a progressive cyclical process. Three stages may be assumed:

(1) Angina, which signifies coronary sclerosis, local or diffuse. Pain and difficult breathing usually indicates that a previous small coronary blocking has occurred. Angina is usually relieved by nitroglycerine or rest without medication. The prognosis of angina is much better than formerly considered. These patients may live 1 to 20 years.

(2) Coronary thrombosis may be diagnosed by the appearance of pain which persists for a long time, or strangulation, accompanied by shock. No relief is obtained from vaso-dilators and there is marked heart consciousness on the part of the patient. The prognosis is poor, but better than formerly considered. It depends upon mental and physical strain to which the individual is subjected.

(3) Following coronary thrombosis, pain and difficult breathing on physical exertion or mental excitement is noted. The prognosis is bad.

Summary

A. Most patients with angina of effort have pathological coronary occulusion. We have experimental proof of this statement.

B. Coronary disease is a disease of senility, not of youth.

C. It is due to arterio-sclerosis and athero sclerosis.

D. It is progressive, relative and cyclic.

E. The pain and discomfort are due to insufficient blood supply to the heart muscle.

F. Shock is characteristic of coronary thrombosis and

G. Coronary anstomoses increase with age.

*Taken and abstracted by R.L.G., during the Chicago meeting Oct. 26-29, 1943, of the Interstate Postgraduate Medical Assembly.

◆

Iron Therapy

By CHRIS P. SEGARD, M.D.
New York City

In some work that I have recently observed, an increase of 0.5 Gm. of hemoglobin was made daily with the dose of 100 mg. of iron and 4 mg. of copper. This I do not believe can be exceeded by any therapy with iron alone.

Patients should be instructed to take the medication only with food. We have found many failures were due to the fact that a mineral medication was used between meals.

2740 Graybar Building

◆

Treatment of Retention of Urine

By R. L. GORRELL, M.D.
Brooklyn, New York

Case history: A girl of 18 was seen during the last week of her pregnancy, for the first time. Examination, both physical and x-ray, disclosed a normal sized pelvis and breech presentation (frank breech with legs fully extended). Urinalysis was negative.

She delivered spontaneously and without complications of any type. When she could not urinate some 8 hours after delivery (she had been catheterized at

time of delivery) the usual routine of Prostigmine injections, warm applications to the bladder and so on was begun. In the ensuing eight days, the patient did not void spontaneously despite injections of all recommended medications and being permitted to go to the toilet.

No discomfort ensued, even when the bladder was distended with 1,200 cc. of urine. Catheterization was carried out regularly every 8 to 12 hours. The patient was given sulfadiazine to keep the urine as sterile as possible. She felt and looked fine; urinalyses were negative.

After ransacking the literature, a mention of potassium acetate solution was found in Hamilton Bailey's "Emergency Surgery" (William Wood and Company, Baltimore).

℞ Liquor potassii acetatis 1/15 solution iv ℥.

Sig.: ℥ss is given every half hour for eight doses, if required. Within four hours, she began to urinate normally and has continued so without further treatment.

"Potassium acetate is a parasympathetic system stimulant as well as a diuretic" (Bailey). One case doesn't give conclusive proof, but it looked good, especially after urologic consultation failed.

Marine Hospital

✦

Undulant Fever (Brucellosis)

By I. FORREST HUDDLESON, M.D.
East Lansing, Michigan

The sensitization of humans to Brucella is comparable to sensitization to the tubercle bacilli. The allergic reaction is a defensive one. The body tissues attempt to localize the antigen at the point of entrance. The serum antibodies other than opsonins are of little aid in protecting against infection. (Dr. Huddleson has devised Brucellergin as a skin test for Brucellosis and Brucellin as a vaccine for treatment.—Ed.)

✦

Painful Dressings

By JOHN S. LUNDY, M.D.
Mayo Clinic
Rochester, Minnesota

Painful dressings may be avoided by the use of an anesthetic ointment. Metycaine base is used. Since that is an oil product, one melts the vehicle and then adds a measured amount of the metycaine base to the hot oil. When it cools, one handles it the same as any other sterile ointment. (Eli Lilly and Company make Metycaine, a local anesthetic,

Comments on Testosterone Treatment

By WARREN O. NELSON, M.D.,
Professor of Anatomy
Wayne University
Detroit, Michigan

Two chapters in the Second Edition of "Glandular Physiology and Therapy" published by the American Medical Association concern androgenic therapy. These are:

1. Present status of commercial endrocrine preparations, by S. C. Freed.
2. Therapeutics of testicular dysfunction, by J. B. Hamilton. These present general aspects of therapy with androgenic substances and are worth reading. More specific information can be obtained in articles by the following authors:
   1. J. P. Pratt in the J. Clin. Endocrinol., 2: 460, 1942. Discusses the use of testosterone propionate and methyl testosterone in hypogonadism.
   2. J. E. Howard & H. J. Jewett (J. Clin. Endocrinol. 2: 107, 1942) discuss the use of pellets of testosterone propionate in hypogonadism.
   3. S. F. Goldman and M. J. Markham (J. Clin. Endocrinol, 2: 237, 1942) discuss testosterone propionate in the male climacteric.
   4. S. H. Geist and U. J. Salmon (J.A. M.A., 117: 2207, 1941) discuss the use of androgens in the female (climacteric; uterine bleeding; painful breasts; uterine fibroids).

These various references are only representative of a large volume of literature on the subject. It may be said in summary that two androgenic substances have had wide clinical use. These are testosterone propionate and methyl testosterone. The latter is particularly useful since it appears to be effective when given orally. Testosterone propionate is administered in oil or by pellet implantation. Other androgens, such as androsterone, androstenedione, and so on, have been given relatively little clinical trial. This is not surprising since their androgenic potency is lower than testosterone propionate.

Excellent results can be obtained in cases where a deficiency of male sex hormone exist. These are specifically, hypogonadal men and men undergoing the climacteric. The usefulness in other conditions is less clear and in the case of women the unfortunate side-effect of masculinization renders their use subject to criticism.

Editorial

Endemic Typhus in the United States

FOR some twenty years now, endemic (murine) typhus has been recognized in the United States. In an epidemiological study in Savannah in 1926, Maxcy indicated that cases occurred in people exposed to rats and their ectoparasites. in 1930, Dyer and his associates proved that the rat-flea, *X. cheopis*, was the effective vector from infected rats to man. Since the clarification of the epidemiology of murine typhus in the United States, more and more cases are being reported to the United States Public Health Service each year. As an example, it might be well to record the number of reported cases for the past four years:

1940 — 1,882
1941 — 2,787
1942 — 3,736
1943 — 4,517

(Murine typhus is defined as typhus transmitted from rats to man by bite of the rat flea.—ED.)

From these figures, it is evident that murine typhus is a considerable problem in this country. In the past, the majority of cases occurred in urban areas mainly in the southeastern United States.

However, Topping and Dyer in 1941, reported on isolated cases proven in the laboratory to be typhus fever, as having occurred recently in Richmond, Washington, St. Louis, Cincinnati, and Cleveland. These cities not only represented new foci of the disease but also indicate that the disease is occurring in areas not considered to be within the accepted endemic area. They recommended that practicing physicians throughout the midwest and other sections of the country keep endemic typhus fever in mind as a *possible diagnosis in cases of fever of undetermined origin*, particularly in those with an unexplained exanthem.

Clinically, the disease is an acute febrile illness of approximately fourteen days duration. The appearance of a discrete macular or maculo-papular rash mainly on the chest and back on about the sixth day of fever is the principal important physical finding. This exanthema, at times, is faint and difficult to see and it may be quite fleeting in nature.

When typhus fever is suspected, it is wise to seek laboratory confirmation in the form of a Weil-Felix reaction, (agglutination of the X-19 strain of proteus) or in the complement-fixation test. A single Weil-Felix reaction may be misleading, several tests at five to seven day intervals will give more information, as the rise and fall in the agglutination titre is the significant finding. Unfortunately, both Typhus fever and Rocky Mountain spotted fever produce a positive Weil-Felix reaction, this test therefore is of no value in differentiating these two diseases. On the other hand, the complement-fixation test using the two specific antigens, will differentiate them from each other. Neither the Weil-Felix nor the complement-fixation test become positive until the middle or late in the second week of the febrile period.

NORMAN H. TOPPING, M. D., *Surgeon U. S. Public Health Service.*

◆

The pleasantest things in the world are pleasant thoughts; and the great art of life is to have as many of them as possible.
—*Montaigne.*

◆

Educating Your Patients

If patients knew what you could do for them and had some idea of present day practice, the physician's lot would be much easier. He would not need to spend hours explaining the possibilities of cervical cauterization in curing lower abdominal pains, vaginal discharge and "cystitis" symptoms, the advisability of following through a complete series of hemorrhoid or varicose vein injections to get maximum results, the advantages and disadvantages of tonsilectomy, the ligation of the saphenous vein for varicosities, the potential harmfulness of sulfa drugs when not used properly and the delicate problem of consultation.

Clinical Medicine will write up, in patients' language, the above and other desired topics so that you may distribute them, without charge.

Please write to us at the Medical Arts Building, Waukegan, Illinois, if you

think the idea has merit and what topics you feel that your patients should know about. A postcard will do.

✦

The bigger a man's head gets, the easier it is to fill his shoes.—*Kalends of the Waverly Press.*

✦

The Widow Writes to the Physician

"I realize that a feeling of bitterness will not bring my husband back but I do feel as you must—that if you had watched conscientiously for symptoms and recognized them when they were so evident—the dark red flush, the bloodshot eyes, blood blisters on his tongue and in his mouth, which he had for two days before the actual bleeding started and even after he started bleeding from the nose, you still did not stop the sulfa until the next morning after he started bleeding from the kidneys, and then it was too late, he would have lived and should have under other conditions, but it was too much to expect from a place like that. I shall have a horror of it as long as I live."

(Signed) Charlotte

On taking over a medical service in a government hospital, this letter was found. Is it an indictment of the physician, of government medical care, or both?

✦

Never conceive progress as mere breadth; true progress is always in depth—DuPrel.

✦

How Frequently May a Donor Be Used?

A very practical question, which arises when one must give a number of transfusions of blood, concerns the number of times one individual may give blood with benefit to the patient and without permanent harm to himself. This problem especially concerns those physicians who use donors, i.e. relatives and friends, who will not be remunerated, those physicians practicing in small towns and those physicians who find it difficult to match an unusual recipient's blood.

Co Tui (*Journal of the American Medical Association*, Feb. 5, 1944) shows that donations may be given much more frequently than was formerly thought possible. It must be remembered that women tend to develop anemia more readily than men.

No harmful results seem to follow the donation of blood at regular intervals of 4 weeks, if iron is given to the donors. If 400 cc. or less is given, male donors may be used four or five times at intervals of one to five days.

His experimental and clinical work shows that if the red blood cells left over, after blood has been removed for use as blood plasma, are reinjected into the donor, the plasma proteins and hematocrit return to normal within 48 hours after the reinfusion of red blood cells (after each donation).

✦

Morphine, Asthma and Death

There seems to be an impulse on the part of the physician to give morphine for the relief of asthma, either bronchial or cardiac.

Rackemann[1], two years ago, reported five cases in which death occurred shortly after morphine had been given (Massachusetts General Hospital, Boston) for bronchial asthma.

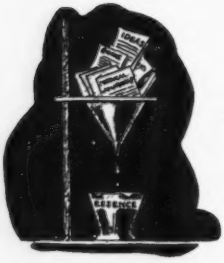
Brock[2] reports ten deaths in patients with either type of asthma, or both types, who received morphine (Groote Schuur Hospital, Cape Town, South Africa).

In some patients, morphine is clinically very effective, as many practitioners are aware. On reflection, and on looking up records, it will be noted that such patients were young, vigorous and uncomplicated with chronic bronchitis. Certain patients are allergic to morphine, and its use results in an increase of the asthma.

The slow, intravenous injection of aminophylline relieves difficult breathing due to bronchial asthma or to paroxysmal cardiac dyspnea. (The differential diagnosis often cannot be made when called hurriedly to the home, and in both conditions, wheezing may be heard. A chronic asthmatic may also have an attack of cardiac dyspnea).

---

[1] Rackemann, F. M.: *Med. Clin. N. Am.*, 26:1501 (Nov.) 1942.
[2] Brock, J. F.: *Clinical Proceedings.* 2:222 (Aug.) 1943.



CLINICAL NOTES and ABSTRACTS

Microfilm copies of any of the published papers here abstracted, up to 25 pages, may be obtained for 25 cents from Microfilm Service, Army Medical Library, Washington, D.C.

Treatment of Two Types of Minor Burns*

Most papers on burns have little to say about the minor conditions such as blisters and small burns. I have seen two conditions which I have felt were not properly cared for. One is the small blister that occasionally is seen after the use of a hot water bottle. Some of these blisters have been slow to heal under ordinary methods of treatment. For probably five years now, I have been aspirating the fluid from them with a small hypodermic needle. I insert the needle in the skin just a little outside the blister and run it into the blister, well inside the elevated edge of the skin. After removing all the fluid, the cavity is thoroughly irrigated with a 4 per cent solution of freshly prepared tannic acid and a small amount of this fluid is left inside the cavity (fig. 1). The blister and a small portion of surrounding skin is then painted with merthiolate and a sterile dressing applied. As a rule, no further treatment is necessary and the patient is free from pain.

The other condition to which I want to draw special attention is the occasional unavoidable burning of the skin of the vulva during the course of a cauterization of the cervix. If the skin has been touched with the cautery or sometimes just exposed to the steam coming from the cauterization, there will be a white field of skin often with a break in it. If this is left or even if it is treated immediately with any of the better known methods for treating burns, the patient is uncomfortable. The irritation from urine and the slow healing causes considerable discomfort. If the patient realizes that she has been burned she may be upset. I have found that a satisfactory way of treating such a burn and one that I have used for at least ten years is to excise the whole lesion and to put in a few superficial stitches of plain catgut (fig. 2). As a rule, such a wound will heal by primary union and the patient will have no pain or discomfort and will have no mental upset. —J. C. MASSON, M.D.

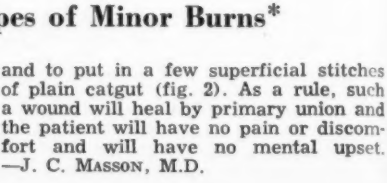


Fig. 1. Aspiration of blister followed by injection of tannic acid.

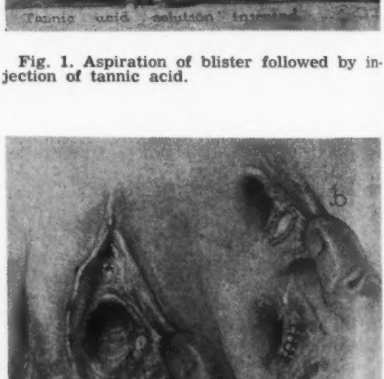


Fig. 2. a, b and c. Excision and suture of small burn on vulva.

Proc. Mayo Clinic, August 11, 1943.

"Nervous Symptoms" and Hyperventilation

Hyperventilation (abnormally prolonged, deep breathing): An increase in the quantity (minute volume) of air respired due to an increase in rate or depth, or both, of respiration.

Causes: Muscular exercise, hot baths, fever, sudden pain, heat or cold to the skin, lack of oxygen, *anxiety* or fear.

Puzzling symptoms:

1. Weakness and increased fatigability
2. Dizziness and blurred vision
3. Nausea and vomiting
4. Palpitation
5. Muscle cramps and muscle tightness
6. Air hunger or shortness of breath
7. Sweating of the hands
8. Diarrhea or constipation
9. Numbness and paresthesiae
10. Urinary frequency
11. Precordial or epigastric pain
12. Lower abdominal cramping pains

If otherwise normal persons undergo deep, prolonged breathing, these same symptoms appear after varying time intervals. If hyperventilation is persisted in, tetany appears. Slight stiffness of the fingers and clumsy movements of the hand are the earliest signs, although the tetany may progress to severe spasm of the hand (carpopedal spasm or "obstetrician's hand"), and tetany of facial muscles, which may result in the appearance of acute anxiety. Tachycardia (up to 150 beats per minute), sweating, crampy pains in legs and abdomen, numbness and tingling about the hands, feet and face appear.

Pilots who do not adjust well to the demands of pilot training may overbreathe, tetany ensues, and the pilot "freezes to the controls."

Treatment: Explain to the patient that nervous excitement, worry and other causes result in abnormal breathing, which is followed by alkalosis and the varied signs and symptoms listed above. Anxiety, even when the individual is unaware of it, occurs when the individual cannot adjust himself satisfactorily to his problems of living. Psychiatric consultation should be sought when an immediate cause cannot be found, as the roots may go far back into the individual's past. Financial worries, sexual maladjustments, marital difficulties, philandering husbands and unfaithful wives, worry over loved ones in the Services and inability of soldiers and sailors to adjust to the new problems are common causes.

Immediate treatment: A paper bag tightly fitted to the head or face and breathed into regularly for 3 to 10 minutes will relieve the symptoms (inhalation of 2 to 5 percent carbon dioxide with oxygen through a mask will relieve all symptoms in 1 minute). In either case, the increased carbon dixide slows down respiration.

When the patient feels the symptoms coming on, or when he notices himself hyperventilating, he should hold his breath for 10 to 15 consecutive breaths to avert the oncoming attack.

Prove to the patient that breathing is responsible for his symptoms by having him overbreathe and produce the symptoms, then relieve them by carbon dioxide and oxygen or the paper bag. When the patient realizes that his doctor can produce and relieve his symptoms at will, a great distance on the road to cure will have been covered. Acidifying salts (ammonium chloride up to 6 Gm or 90 gr. daily or calcium chloride) will prevent alkalosis from occurring. The patient can be taught to regulate the dose himself by using Nitrazine (Squibb) paper to test his urine and by taking enough ammonium chloride to keep the urine pH below 6.5 or 6.0. Sedatives should be used sparingly. — ROBERT W. QUINN, M. D. in *U. S. Navy Med. Bull.*, August, 1943.

✦

Common Errors in Surgery

One of the most irreparable errors checked beforehand so that no error can is improper site of incisions. It is not uncommon for one to see an incision directly through the anterior aspect of the quadreceps muscle for exposure in open reduction of the femur of the mid-third. This practically always results in limited motion at the knee, particularly in flexion. Cross or "X" incisions are always undesirable, yet we occasionally see them.

The improper application of bone plates is one of the most frequent errors. Most often the plate is inadequate in length for proper support and practically always the screws fail to penetrate both cortices. If the plate be too short or of too small a size, then there will not be adequate mechanical support for the fracture. If at least one screw proximal and one distal to the fracture site does not penetrate the opposite cortex there is excellent chance that the plate will become loosened resulting in improper fixation. The use of the improper size drill point for the screw, particularly if the drill is too large will result in loosened screws. The drill should be the size of the shaft of the screw with the

threads removed and it is felt that a thread cutting screw is a great advantage. An adequate supply of plates and screws should be on hand before surgery is performed and the drill which should be used with certain screws should be be made in selecting the drill point. Care should be employed in applying the plate so that the fragments are not held apart but are in good contact. The writer feels that the best method of obtaining and maintaining contact of the fragments is with the use of a slotted plate which allows for some final adjustment to be carried out after the plate is applied and before the final turn of the screw is made.

Removal of Casts

On occasions patients have been examined with the malformations following open reduction where radiographs showed excellent position had been obtained at the time of surgery but where the surgeon felt it was necessary to remove the cast two weeks following surgery for the removal of sutures or even to leave the cast off until the sutures were removed. This is a hazard which should not be taken as either stainless steel or absorbable sutures may be used and the cast may be left on for months if desired without their removal. Immobilization is not continued for a sufficient length of time. Removal of cast before bone union is complete may result in poor alignment.

When and how to cut a cast is important. Should it be necessary, because of swelling or other signs of obstruction of circulation, it is desirable to cut the cast from the heart or proximal extremity of the cast to the distal. When the toes or fingers are swollen, the cast is more often cut around them to relieve discomfort and this generally makes them only swell more. The cast should be cut from proximal to distal until the skin is visible through the entire length. Not only does this relieve any obstruction caused by the cast, but it usually will not cause any loss of position of fragments, and furthermore it is easy to later place a roller plaster bandage around the cast, close this space and remove the slack when the swelling has subsided. The most frequent method of relieving areas of local pressure under a cast is to cut a circular hole out of it. Almost invariably this causes a herniation of soft tissue and makes more serious complications. The correct method is to cut an X or cross in the plaster and pull up the corners. As soon as pressure is relieved, the corners may then be strapped down with adhesive tape and herniation may be prevented. The application of skin tight circular plaster of Paris cast to a recent fracture without cutting it is considered dangerous unless unusual care be given. On the other hand the non-use of skin tight walking cast on the proper fracture at a later date is an error of treatment.

Club Foot

When should treatment be begun on a club foot? Not infrequently a mother brings her year-old child in with club feet. When I inquire why they have waited so long to bring the child in, they state that they were told by their family physician, when the child was born, that no treatment could be carried out until the child is a year old. Club foot treatment should be started the first week of life unless there are other serious physical complications that prevent treatment. It is highly desirable that the feet be corrected completely by one year of age so that the child may start walking at the usual time. If, however, treatment is deferred to this age, perfect function is rarely obtained and it is usually necessary to perform surgery which might otherwise have been avoided.

Traction

With the popularity of skeletal traction, we frequently see additional fracture of the long bones from Steinman pins which have been driven in by the use of a mallet. While this is usually not a serious complication, it is one which may prove embarrassing and can practically always be avoided if the proper site be selected or if the pin be drilled instead of driven in. Such fractures usually occur in the shaft of the tibia when an attempt is being made to drive a pin with a mallet too near the center of the shaft. If a site be selected near the joint in the cancellus bone, there is little likelihood of a fracture. Probably more desirable, however, is the use of a heavy drill of the Sloat type. If an electric drill be used it should go at slow speed to prevent burning tissues. After the pin is placed there is still a chance of fracturing the bone in manipulation of fractures if both cortices are not penetrated.

It is not best to tell the patient with fractures of the transverse process that he has a broken back. To treat them as one does a compression fracture of the spine is, in the writer's opinion, harmful. There is usually little loss in

function from even ununited fractured transverse processes.

Dislocations

Not considering dislocations in acute emergencies is a great mistake as the ease of reduction is inversely proportional to the amount of time elapsed since the time of occurrence. Failure to examine patients properly and allowing a dislocation to go overnight is a mistake. A dislocation which is allowed to go long enough to necessitate an open reduction may result in great loss of function of the joint. Any joint which remains untreated and dislocated for three weeks may be considered for all practical purposes to be irreducible by closed means.—J. L. SMITH, M.D., in *Southwestern Med.*, July, 1943.

✦

Tourniquets Are Never Needed

A completely severed artery is controlled by traumatic arterial spasm. Men and experimental animals have lived despite complete division of an artery.

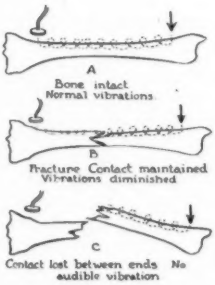
The danger of continued hemorrhage is from a partly severed vessel where the hole cannot be sealed by spasm, but *it can be sealed by local pressure* over the wound.—R. WATSON-JONES, F.R.C.S. *Lancet*, Feb. 6, 1943.

✦

Detection of Fracture

The sketch below shows a method of detecting a fracture when an x-ray machine is not available, as in military or first aid surgery.

There need be no marked gaping or displacement of the fractured ends to stop all audible transmission of sound.—*Southern Medicine and Surgery.*



Effect of Drugs in Essential Hypertension

Trials were made in which *theobromine* (3.7 dimethylxanthine), a prepared combination of *theobromine and phenobarbital* sodium (theominal), a proprietary arterial antispasmodic agent (iocapral) and theophylline with ethyl diamine (aminophylline) were employed. Erythrol tetranitrate was chosen as a representative of the nitrate and nitrite groups of drugs. Phenobarbital, in varying dosages, was used alone. Two further medicaments, a proprietary hypotensive agent, known as hepvisc, and a proprietary vasodilator, known as aillimin, completed the list of exhibited drugs.

No significant hypotensive effect was seen when the drugs were administered in the dosages recommended by the manufacturer (or larger).

On the basis of this study, it may be reasonably concluded that the drugs referred to herein, when administered continuously in optimal dosage for periods of four weeks, do not possess any significant hypotensive effect on the blood pressure of hypertensive patients.

This group of patients was selected from the inmates of a state hospital for the insane. Some institutional employees were included as normal controls. The patients were men from thirty-eight to seventy years of age, who were suffering from hypertension of varying severity. No examples of malignant hypertension, or hypertension group 4, were included. The total group of more than sixty men was broken up into subgroups of from five to eleven members. The physical activities, meals

and ages were roughly comparable throughout the established subgroups. All patients were subected to minimal physical, laboratory and roentgenologic examinations to exclude those who did not have essential hypertension. Each member of each subgroup received one form of treatment. None of the patients in the study were receiving any other medicine which might conceivably affect the level of blood pressure.

Determinations of blood pressure were made at least three times daily and in almost all cases by one examiner. The technic in all determinations followed the suggestions of the joint British-American Committee for Standardization of Methods of Determining Blood Pressure. The maximal and minimal systolic and diastolic pressures were recorded. In all cases, a period of seven to ten days in which medicaments were not given was devoted to determining the values for blood pressure and its fluctuations before any type of treatment was employed. In almost all cases, a further observational period of seven to ten days followed discontinuance of all treatment for the detection of any possible delayed responses. The actual period of treatment lasted through four full weeks. This total period of more than five weeks seemed ample for any hypotensive effects to develop.

Discussion

False conclusions are due to two things which have been largely avoided in this study: (1) the tendency to consider symptomatic relief as the chief criterion of the effectiveness of a drug in the treatment of hypertension and (2) the failure to recognize the importance of the inherent variability of the blood pressure in estimating the effects of various drugs on the blood pressure. This is not to say that symptomatic relief is not desirable in treating hypertensive disease but it has become apparent that the symptoms associated with hypertension are seldom directly related to the actual height of the blood pressure nor is symptomatic relief necessarily related to survival.

Many physicians are well aware of the fact that extensive sympathectomy may result in a profound lowering of the blood pressure especially when the patient is in an upright position. Furthermore, some drugs will lower blood pressure, for example, postassium thiocyanate. In one case, the systolic blood pressure eventually was lower than the diastolic blood pressure had been before treatment with potassium thiocyanate was begun. This case is not a typical example of the effects of potassium thiocyanate on the blood pressure. Nevertheless, it does demonstrate in a striking way that the blood pressure can be reduced in some cases and it again demonstrates that the blood pressure may be reduced from high levels to relatively low levels without interfering significantly with the essential functions of the body, particularly the function of the kidneys.

It is true that none of the procedures or drugs so far advocated in the treatment of hypertension are ideal, but some are useful adjuncts in the treatment of properly chosen patients. Let it be emphasized that there is still a great need for a more ideal treatment for hypertensive disease.—*Staff Meetings of the Mayo Clinic*, June 16, 1943

◆

Dangers From Repeated Sulfa Administration

"With the widespread administration of the sulfonamide drugs, studies of untoward reactions become of great significance. The increased use of these drugs for very minor illnesses and even for prophylactic purposes makes crucially important the evaluation of the risks of 'acquired sensitivity'."

It has been stated that the occurrence of an immediate reaction, that is, fever within the first day, *almost invariably* means that the patient has had previous contact with the drug. It is obvious that if the risk of such sensitization of a patient is considerable, the use of this extremely valuable therapeutic agent for minor illnesses or for prophylaxis may be quite unjustified, since it may prevent its lifesaving effect in future emergencies.—H. W. FINK, M.D., in *Internat'l Med. Dig.*, Aug. 1943.

◆

Pernicious Anemia and Vitamin C

A provocative report of the successful treatment of pernicious anemia patients with ascorbic acid, when liver therapy alone failed to elicit a response, has been presented by Dyke, et al (*Lancet* II, 278 (1942)). Ever since Minot and Murphy, in 1925, first reported the successful remission of that hitherto incurable disease, by the feeding of large amounts of liver, it has been recognized that it is important to treat concomitant dietary deficiencies in order to obtain successful results. Thus the administration of iron salts may be necessary, along with the feeding of liver, or the injection of potent commercial prepara-

tions of liver extract, because iron is needed for the production of hemoglobin and some patients may not have suitable reserves of this element. Protein is another important factor and, in general, it is becoming recognized that along with adequate therapy, pernicious anemia patients may need specific instructions in the art of selecting an adequate diet.—*Nutrition Reviews*, Feb. 1943.

✦

Gyno-Urologic Patients

Persistent genito-urinary infections: Infections are readily transmitted from the bladder to the gynecologic tract and vice versa. *Both* must be examined and treated.

Case history: A young woman was examined because of hematuria of 2 days duration. Examination showed chronic endocervicitis, inflamed trigone and sphincter. She had been sterile for 5 years. Her husband had normal spermatozoa of normal shape on microscopic examination of his semen, but many pus cells were found after prostatic massage. It proved much harder to get his prostate rid of pus cells than it was to clear up the infection in the woman.

Later, she complained of pain in both lower quadrants and needed to get up several times nightly to void. It was explained to her that a tightness of ureters was a fairly common sequela of pelvic inflammatory disease, as the ureters are involved where they pass through the broad ligaments on either side. The pain and ureteritis might have disappeared with slow absorption, but two ureteral dilatations were all that was needed to cause a disappearance of pain and nocturia.

After several months, the husband's prostatic secretion showed no pus cells and did show the normal lecithin bodies on 3 consecutive examinations. In the meantime, I had carried out a salpingogram with Diodrast on the wife (x-rayed the Fallopian tubes after the intra-uterine injection of a contrast solution). After a Lipiodol salpingogram, she became pregnant, Diodrast doesn't open the tubes sufficiently to permit pregnancy in these old cases of pelvic inflammatory disease. Both husband and wife are in better physical condition and are happy.

Chronic Salpingitis

After many years of observation of women with cervical and tubal infections and chronic prostatic infections in their husbands, I have found that it is comparatively easy to cure the female but the prostatitis of the male is much more difficult to cure. Often, with the slightest evidence of remaining infection in the husband, such as 0-5 pus cells in the high power field in the prostatic secretion, the husband will reinfect the wife and the whole process will start up again.

Sterility

After treating 200 cases of sterility, I have learned that one must treat both husband and wife to obtain good results. Surgery, especially salpingectomy, is often not necessary.

Case history: Sterility for 8 years. This woman had a large, eroded cervix which bled when touched with an applicator, a large mass on right adnexal region and left adnexal tenderness. Only partial improvement resulted from treatment (diathermy, cauterization of the cervix and so on).

Examination of the husband's prostatic secretion showed many pus cells. After one massage, the husband said that his tiredness and shortness of breath were improved. Only then did the wife's condition clear up.—BURTIS M. HANCE, M.D. in *Urol. & Cut. Rev.*, June, 1943.

✦

Carbarsone Treatment for Balantidium Coli Infections

Carbarsone, in courses totaling either 5 or 10 gm. in a 10-day period, was given to six cases of balantidiasis. After one or two such course of treatment, the infections were eradicated as shown by repeated post-treatment examinations some of which extended over a 4-year period.

Carbarsone appears to be an effective drug in the treatment of *Balantidium coli* infections.—M. D. YOUNG, M.D., in *Public Health Reports*, Aug. 20, 1943.

✦

Nipple Discharge During Pregnancy

In answer to your query, may I say that I pay no attention to the appearance of a fluid discharge from the nipples during pregnancy. As you know, secretion from the breasts depends upon three hormones. Estrogens produce proliferation of the duct system of the breasts and progesterone stimulates the development of the alveolar system. The actual flow of milk however, depends upon prolactin, an anterior pituitary hormone.

Secretion of milk can be inhibited by hormones which suppress the anterior pituitary. The simplest is stilbestrol.

J. P. GREENHILL, M.D.
55 E. Washington
Chicago, Illinois.

Local Anesthesia Notes

All local anesthesia should have a vaso-constricting agent added such as epinephrine 1:50,000, not only for efficiency but also for safety, because of the great toxicity of all anesthetics.

Cocaine is high in toxicity but it has three advantages: (1) rapid penetration, enabling it to be used on mucous membranes as well as by injection; (2) fairly high local anesthetic efficiency; (3) vasoconstricting property. Hardly any other local anesthetic possesses this useful property.

Procaine is the most effective anesthesia for use by injection while epinephrine is more effective in vaso-contsriction. Neo-synephrin may be substituted for epinephrine in sensitive patients (like goiter cases where circulatory effects should be avoided).

Method of Using Procaine

Local anesthetics are less active in inflamed tissues. By blocking the afferent proprioceptive fibers, procaine injection relaxes muscular tone, particularly under pathological conditions, such as torticollis. Pain, stiffness, lumbago, acute sprains and pain of fractures can be relieved by procaine injection. The site of the greatest tenderness may be infiltrated with 10 to 30 cc. of 1 to 2 per cent procaine solution for rapid relief. Traumatic tetanus and decerebrate rigidity, relax so that spontaneous movements of the limbs return, also respiration is decreased.

Poison

All efficient local anesthetics are convulsive and medullary stimulants. The course of the poisoning is usually rapid, beginning with a feeling of oppression, followed by sudden fainting, dyspnea, and convulsions. The symptoms proceed with cessation of respiration and death, if the amount absorbed is large.

The treatment of this convulsive poisoning is by means of depressants, preferably barbiturates. Amytal has the highest antidotal efficiency. Next in efficiency is phenobarbital, then barbital, paraldehyde, or chloral hydrate. — R. Beutner, M.D., *Anes. & Anal.*, May-June, 1943.

◆

When is Vaccine Therapy Justifiable?*

Vaccine therapy, in the presence of established disease, is justified in certain diseases. In those illnesses where a septicemic stage appears (as typhoid, bacterial endocarditis and syphilis) there is adequate contact between the invading organism and the tissues, and demonstrable antibodies appear in the blood.

In other conditions, which tend to become localized, there is no contact as the lesion tends to become walled off. If vital dyes are injected into the circulation, they will tend to collect in an area of fresh inflammation. If the same thing is done when the lesion has become localized, the dyes do not reach the inflamed part. There appears to be a barrier which acts as a semi-permeable membrane, excluding certain elements in the blood stream and impeding absorption from the lesion into the body.

Boils and Other Staphylococcal Lesions

Persons with repeated attacks of boils do *not* show any increase in antistaphylococcal immunity. This is not due to any defect in their ability to develop an immunity since *they respond well to artificial immunization.* This is also true of patients with osteomyelitis, and pyelitis, as clinical studies have shown that such patients do not have any increase in agglutinins, despite prolonged infection.

—W. Howard Hughes, M. D.

*Royal Society of Medicine, 1943, as printed in the *Proceedings* of July 1943.

◆

The products we advertise are worthy of your attention. Look them over.

◆

Tell Your Patients Who Smoke

So many cigarette manufacturers have sponsored "studies" on the effects of smoking, and incidentally given a boost to the brand under consideration, that it comes as a relief to read an impartial study:[1]

1. *Smoking any substance* (tobacco, denicotinized cigarettes, cornsilk) causes harmful effects.

2. Blood flow in the peripheral arteries is decreased, so that patients with peripheral vascular disease or coronary artery disease, diabetics and arteriosclerotics, should be warned.

3. A decrease in skin temperature, rise in rectal temperature, slight increase in metabolic rate and slight changes in the electrocardiogram are probably not significant.

4. Nicotine is therefore not responsible for the effect, which may be due to the irritating effect of smoke upon the respiratory tract.—W. F. Evans, M.D. in *Am. Heart J.*, May, 1943.

THUMBNAIL THERAPEUTICS

Succinylsulfathiazole for Bacillary Dysentery

• Succinylsulfathiazole is as effective and nontoxic as sulfaguanidine in the treatment of vacillary dysentery. The drug is lacking in toxic effects, and is a specific drug for bacillary dysentery. —*J.A.M.A.*, April, 1943.

Dendritic Keratitis

• Local and oral use of the sulfonamides has not been of much value. Local application of tyrothricin 30 mg. per hundred cubic centimeters with repeated pasteurization by cautery (daily or on alternating days) has led to the most rapid cure.—PARKER HEATH, M.D., in *J.A.M.A.*, Jan. 15, 1944

(The use of a heated metal ball held close to the infected eye—pasteurization—is very effective in curing corneal ulcers. It is used for 2 minutes each day. —ED.)

Thrombosis of the Cavernous Sinus

• Hope of cure is offered by a high dosage of sulfadiazine. A rather high blood level should be maintained for three to six weeks. Treatment must be prolonged to prevent relapses. —PARKER HEATH, M.D., in *J.A.M.A.*, Jan. 15, 1944

The Patient and Sulfonamides

• Patients receiving any form of sulfonamide therapy should be seen at least every 48 hours. Otherwise, patients have no idea of the toxic reactions which the drugs can produce and will interpret them mistakenly.—T. L. POOL, M.D., in *Wis. M. J*, July 1943

Fever and Vitamin B For Poliomyelitis

• The intraspinal or intravenous injection of thiamine together with artificial fever treatments have resulted in complete cure of early poliomyelitis.—Simon STONE, M.D., in *Arch. Phys. Ther.*, June 1943

Treatment of Chronic Ulcerative Colitis

• The injection of air or oxygen into the abdominal cavity is of great benefit in the treatment of chronic ulcerative colitis. Indications are: Chronicity, diarrhea, pus, mucus and blood in stools, and intractability. Refilling can be done two or three times a week. The patient need not be confined to bed except for a few days. Oxygen, because of its calming effects, is preferred for the first fillings. The treatment may be continued for three months or more. Pneumoperitoneum is free enough from danger for it to be performed by a practitioner, even without the facilities of a hospital.—H. NEUMANN, *British Med. J.*, April 1943. (The amount of air or oxygen used is 1000 cc. Also, the patient's comfort can be used as a gage) ED.

Phenol Treatment of Chancre

• The painful "soft chancre" can be destroyed by local application of phenol. The proper manner of using liquified phenol on such a lesion is: (1) to apply the liquified phenol, (2) to let it act until the pathological growth or chancre is destroyed, (3) finally, to swab the site with alcohol which interrupts the caustic action of the phenol before healthy tissue is attacked.—R. BEUTNER, M.D., *Anes. & Anal.*, May-June 1943

Stilbestrol in Gonorrheal Vulvovaginitis

• Gonorrheal vulvovaginitis of children may be cured by the oral administration of 1 mg. of stilbestrol three times daily for one week, or until smears and cultures are repeatedly negative for the gonococcus.—C. COLLINS, M.D., in *Tri-State Med. J.*, Jan. 1943.

Histidine Mono-Hydrochloride in Vomiting of Pregnancy

• When the usual treatment for vomiting of pregnancy fails to obtain relief, it can be obtained in three out of five cases, by the daily intramuscular injection of Larostidin, or any other histidine mono-hydrochloride. 5cc. in the gluteal muscles, once a day for three or four days will give improvement.—A. J. RUSSO, M. D., Salem, Va.

DIAGNOSTIC POINTERS

Neurotic Patients

• Good signs of a neurosis are the inability of the patient to state what the main complaint is, a tendency to answer the physician's questions with irrelevant statements, to complain too much of trifling matters, to break in and not let the physician finish a sentence, to keep on consulting a long written list of symptoms, to tremble and even weep as the story is unfolded or even to tell the physician how to diagnose and treat the disease. *The harder it is to get a clear history out of a patient, the less likely is he to be suffering from organic disease.*—W. C. ALVAREZ, M. D., in *Med. World*, Dec. 17, 1943

Menopausal Arthritis

• The most interesting feature of "menopausal rheumatism" is that, according to some clinicians, it develops most readily in hypothyroid women and is often beneficially influenced by thyroid hormone therapy.—H. SELYE, M.D., in *J.A.M.A.*, Jan. 22, 1944.

Head Noises

• Following is a list of possible causes of this very common complaint:

1. Impacted cerumen.
2. Pathological closure of the eustachian tube.
3. Acoustic trauma.
4. Otitis media and otosclerosis.
5. Drugs and poisons.
6. Cardio-vascular disorders.
7. Gastro-intestinal conditions.
8. Psychoneurological disturbances.
9. Allergy
10. Involvement of otic, gasserian and geniculate ganglia.
11. Intracranial growths.—E. P. FOWLER, M.D., in *Med. World (Lond.)*, Dec. 24, 1943.

• Ofter a positive laboratory finding is correct enough, but it does *not* account for the symptoms.— W. ALVAREZ, M.D.

Cancer of the Colon

• Any alteration in bowel function, such as constipation, diarrhoea, alternating constipation and diarrhoea, blood in the stools or a change in the calibre of the stools, should lead one to suspect a carcinoma of the large intestine. Moreover, if we wait for massive haemorrhage, anaemia, marked loss of weight, a palpable mass and complete bowel obstruction, then the lesion will usually be found to be inoperable. Any patient above forty years of age, male or female, who complains of "cramps", should be suspected of having a lesion in the large bowel.—DR. MCGAULEY, in *Med. World (Lond.)*, Dec. 24, 1943.

Gastric Cancer Versus Anemia

• Patients with cancer of the stomach are often treated for months on the mistaken diagnosis that a pernicious anemia was present. Response to liver and other replacement therapy has been so effective that the lesion was considered a blood dyscrasia, primary in origin rather than secondary to a gastro-intestinal lesion. After a time, the response of the anemia to replacement therapy failed and about this time digestive symtoms developed which led to roentgenologic studies and the finding of an unsuspected gastro-intestinal lesion.

Examination of the gastro-intestinal tract should be carried out on all patients who are suspected of having pernicious anemia. Very frequently, bleeding gastric and colonic polyps as well as malignant lesions will be found.—WALTMAN WALTERS, M. D., *Proceedings of Staff Meetings of Mayo Clinic*, June, 1943

Abdominal Pain From Spondylitis

• Upper abdominal pain may be due to arthritis of the spine, yet be wrongly diagnosed as angina pectoris, malfunctioning gallbladder, peptic ulcer or gastritis. It is not however a pain, but an ache or a burning sensation which is felt superficially. It has no relation to fast walking or going upstairs or eating, but tends to get worse when the patient has been sitting for some time and passes off when he gets up and walks about for a while, thus indicating that the disease is of an arthritic or fibrositic character.—W. ALVAREZ, M.D., in *Med. World (Lond.)*, Feb. 18, 1944

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

Books are the most mannerly of companions accessible at all times, in all moods, frankly declaring the authors mind, without offense.
—AMOS B. ALLCOTT

* * *

THE TREATMENT OF PEPTIC ULCER

Heuer

THE TREATMENT OF PEPTIC ULCER, BASED UPON TEN YEARS' EXPERIENCE AT THE NEW YORK HOSPITAL. *By* GEORGE J. HEUER, M.D., *Professor of Surgery of Cornell University Medical College and Surgeon-in-Chief of the New York Hospital. Assisted by Cranston Holman, M.D., Assistant Professor of Clinical Surgery and William A. Cooper, M.D., Assistant Professor of Clinical Surgery. Philadelphia, London, Montreal: J. B. Lippincott Company. 1944. Price, $3.00.*

At last, an unbiased book on the study and care of the peptic ulcer patients. Too often books have been written from the standpoint of the internist or the surgeon. This book discusses actual results of medical and surgical therapy of ulcers and presents the disadvantages and advantages of both methods for each type of ulcer and its complications.

For those men who have wanted to know the truth about peptic ulcer therapy of today and its end results, this book is advised. It is refreshingly honest, brief, and interesting.

✦

THE HEART AND ARTERIES

Herrmann

SYNOPSIS OF DISEASES OF THE HEART AND ARTERIES. *By George R. Herrmann, M.S., M.D., Ph.D., F.A.C.P., Professor of Medicine, University of Texas; Director of the Cardiovascular Service, John Sealy Hospital; Consultant in Vascular Diseases, U.S. Marine Hospital. Third Edition. 103 text illustrations; 4 color plates. St. Louis: The C. V. Mosby Co., 1944. Price, $5.00.*

Herrmann's text has made a place for itself, by presenting the essential facts on which to base a diagnosis and treat heart and arterial disease. His sketches showing the normal appearance and diagnostic abnormalities on roentgen examination are of real teaching value.

"There are no pathognomonic symptoms of heart disease." "More diagnostic mistakes are made in this field . . . because of a few fundamental mistakes (1) the presence of any one of the so-called cardiac symptoms —shortness of breath, edema and pain—or the presence of any murmur, spells heart disease; (2) to feel that every heart over which no murmurs can be heard is healthy and normal, is just as fallacious; (3) the idea that every irregularity or disturbance of the heart mechanism indicates myocardial damage is wrong; (4) if the heart rhythm is regular and slow, it does not necessarily follow that the myocardium must be sound."

Such pithy comments drive home important points. In addition, there is explained in detail how to obtain a good history, how to carry on the examination, what instruments are to be used and how they should be best employed, and how the patient should be managed. Peripheral circulatory disease is considered, as well as each of the diseases of the heart of at all common occurrence. Many photographs of hearts affected by coronary artery disease, hyperthyroidism and so on, are shown. The physician who knows well the contents of this book will have a sound grounding in heart disease.

✦

SYNOPSIS OF MATERIA MEDICA

Davison

SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY, For Students and Practitioners of Medicine. *By Forrest Ramon Davison, B.A., M.Sc., Ph.D., M.B., Formerly Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock. Medical Department, the Upjohn Company, Kalamazoo, Michigan. Third Edition. 40 illustrations, 4 in color. St. Louis: The C. V. Mosby Company. 1944. Price $6.50.*

The previous editions of this small text have been acclaimed by *Clinical Medicine* for the author's ability to condense material concerning every important drug used today into reasonable space and yet to preserve the scientific background.

"New and practical information has been given on the sulfonamides, the vitamins of the B complex, vitamin K, the hormones, certain disinfectants and microbiotic agents. The chapter on Toxicology has been enlarged."

One of the few criticisms that might be offered is that the author does not make clear the use of adrenalin and ephedrine in shock, and present day clinical viewpoint on their employment.

The simple classification permits one to find in a moment information about drugs for a certain purpose. All central nervous system depressants, (including hypnotics, sedatives, anesthetics, analgesics, antipyretics and alcohols) are given in one section, for example.

The practitioner who uses this book will not find that he is becoming an empiricist—he will employ medicines that he *knows*.

✦

NEUROPSYCHIATRY

Selling

SYNOPSIS OF NEUROPSYCHIATRY. *By Lowell S. Selling, Sc.M., M.D., Ph.D., Dr. P.H., Director, Psychopathic Clinic, Recorder's Court, Detroit; Associate Neuropsychiatrist, Eloise Hospital; Adjunct Attending Neuropsychiatrist, Harper Hospital. St. Louis: The C. V. Mosby Co., 1944. Price $5.00.*

For the practitioner and the student, this summary of neuropsychiatry is valuable because it gives, very promptly, the choices in diagnosis and their cardinal signs. Each topic is covered in a brief, information packed manner. Von Recklinghausen's disease is discussed in 1¼ pages, for example, from the standpoint of definition, pathology, etiology, symptoms, differential diagnosis, prognosis, military, medicolegal and treatment. It would seem that such compressed coverage would be valueless, but one is amazed to

find how many worthwhile facts are given.

Possibly the author remembers the older Ochsner's statement that he who knows three things about a disease, is a good diagnostician but he who knows five or more things will get lost in details. Certain it is that it is very easy to write a long book and very difficult to compress essentials into a few pages.

Enough of anatomy and physiology is given so that one can quickly brush up on essentials.

The author's definitions are typical of the common sense discussion: "Neurology is primarily that medical specialty having to do with the individual's disability to adjust mechanically to the demands of life; psychiatry is the medical specialty dealing with the patient's inability to conduct himself in a healthy fashion in his economic, social or cultural life."

The pages concerning multiple sclerosis are especially helpful in recognizing this lesion.

◆

INDUSTRIAL OPHTHALMOLOGY

Kuhn

INDUSTRIAL OPHTHALMOLOGY. *By Hedwig S. Kuhn, M.D., Hammond, Indiana. 114 text illustrations, 2 color plates. St. Louis: The C. V. Mosby Company. 1944. Price, $6.50.*

This text includes a comprehensive view of the whole problem of adapting eyes to industry so that they will be more efficient and so that they will be better protected from injury. A chapter on eye injuries is written by Albert C. Snell of Rochester, N. Y.

Because the author practices in a highly industrialized region, because she has made a study of the various problems in industrial ophthalmology and because she has carried out research work in vision and psychology, the book carries the weight of authority.

Forty pages are devoted to visual testing, twenty to correction of visual defects for the job, forty to visual skills, the presentations all being complete and illuminated with photographs showing various types of jobs.

It is unfortunate that Snell's excellent section on industrial eye injuries contains no illustrations showing technic of repair of lid injuries and other procedures which are difficult to explain clearly.

The various types of eye protection are well shown. Recent developments in industrial eye problems are discussed and an appendix presents toxic hazards, standard method of appraisal of loss of visual efficiency and a check list for eye program in industry.

◆

SAFE CONVOY

Carrington

SAFE CONVOY: The Expectant Mother's handbook, *By William J. Carrington, A. B. M.D., F.A.C.S., Attending Gynecologist. Atlantic City Hospital, Atlantic County Hospital for Nervous and Mental Diseases, Pine Rest Hospital, Atlantic City Municipal Hospital and Atlantic Shores Hospital; Diplomate, American Board of Obstetrics and Gynecology; Former Vice President, American Medical Association. Philadelphia and New York: J. P. Lippincott Company. 1944. Price, $2.50.*

This book combines the proper scientific approach of a well trained obstetrician and the popular appeal of a lay writer. It can be safely, even enthusiastically, recommended to those of your patients who wish to know more about their condition, what plans to make, what methods of pain relief can be used, what symptoms are important, and so on.

As a sample of the real worth of this book: "The early weeks of pregnancy may be dismal and depressing for the wife, because of her retching and vomiting. If the husband doubts this, let him realize that seasickness is a brief imitation of the vomiting of pregnancy. The early weeks are a testing time not only for the expectant mother but also for the expectant father. If he was mother's darling who never grew up emotionally and if his wife continues to spoil him after marriage, he might as well make up his mind that those days are over. No nauseated woman can coddle her husband. . . The husband must be a good sport and not feel too neglected. If he is patient and considerate during the trying early weeks, his wife will be forever grateful."

And just as important, "There is a constant temptation for a pregnant woman to impose on her willing husband but she too, must be a good sport. If she permits her husband to pamper her or if she shirks responsibilities, she should reread *David Copperfield* and let Dickens recall Dora to mind. A morose, disheveled and nauseated wife is a severe test for any husband, but self pity is the last straw."

Just the sort of thing that you have often wanted to say, but lacked the proper words or the impersonal approach so necessary for accomplishment.

◆

GERIATRIC MEDICINE

Stieglitz

GERIATRIC MEDICINE, *Edited by Edward J. Stieglitz, M. S., M.D., F.A.C.P., Consultant in Gerontology, National Institute of Health; Visiting Physician, Medical Service, Baltimore City Hospitals; Attending Physician, Washington Home for Incurables, Washington, D. C. 887 pages with 187 illustrations. Philadelphia and London: W. B. Saunders Company. 1943. Price, $10.00.*

Fifty consultants here offer their help in diagnosing and treating diseases of the older patient.

"Geriatrics is not sufficiently demarcated to be classed as a specialty, rather it is a point of view, an attitude of mind which takes cognizance of the changes consequent to aging."

The work begins with general considerations, which include: orientation, principles, physiologic changes in aging, anatomic changes in aging, mental changes with normal aging, pharmacology as applied to the aged, physical therapy for the aged, anesthesia and surgery for the aged and medico-legal aspects of senility.

Specific systemic diseases includes discussions on syphilis and parasitic disease. Metabolic disorders presents nutritional problems, dysfunction of the thyroid, pituitary and adrenal glands, diabetes, gout.

Disorders of hearing and vision, organic disease of the nervous system, and mental diseases, comprises one section.

There follow systematic chapters on each organ of the body.

The contributors are well known in their respective specialties. Anton Carlson has done an outstanding job on the physiology of older persons. Peter's discussion on urologic problems gives many points of practical value.

The book is well rounded, complete and of interest to every physician and surgeon who must care for old patients. The only criticism that might be made is that the general tone is philosophical and leisurely, so much so that it is often difficult to determine quickly which are important points.